

I had a talk with a designing engineer, doctor of silvicultural sciences, scientific researcher within the Timisoara station of the National Institute of Silvicultural Research and Development in Bucharest. The author of several studies and works concerning forest regeneration, degraded soil recovery by afforestation, the capitalization of the forest stock from the tourist point of view and for health recovery, the creation of national nature reserves and the restoration of the ecological balance, my colloquy for warned us of the dangers threatening the planet's forests.

"Nearly so. It is only the Carpathian ranges that are more sheltered. As far as the Alps are concerned, the landscape they make up speaks for itself. It is increasingly rocky and arid. Most alarming is the

# PEOPLE & IDEAS

"We are working especially in the sector of ecological reconstruction in relation to mining activities, in the huge tailing deposits resulting from open-pit or underground extraction of minerals from the earth where excavation led to the disappearance of the soil. That is, on the soils having the highest degradation coefficient. As a consequence, the resulting lands from flotation and dewatering operations are depleted in the course of tens of years into huge meadows, into fields, into pastures, into a repellent, desolate landscape. In the course of time, under the impact of air currents and other factors, these lands are transformed into a source of ecological

"First of all, they can be recognized by the vital plane, or certainty, where a 'quietude' or instinct of self-preservation and insurance against any transmutation to danger in the field of observation. In the second place, by the warning *tonna oretoblag* to the point where man can not perceive the elements of illusion. In the third place, by the depth orientation plane, the background which ensures the quiet, balance and harmony. On the other hand, examining the amount of information obtained from nature, much smaller and less appreciative than in the city. The last, but not least, is the dominance conveyed



"The proposals I submitted to the Academy include the territories in the Rodna, Călimani, Ceahlănu Măntău, the Biaz Gorges, Hășmaș, Bucegi, Piatra Crieșului, Cozia, Retezat, Munteana, Cerna Valley, Nea Gorge, Caras-Bamono Gorges, Apuseni and Dreca Mountains and the Danuba Delta — the only forest outside mountainous areas. All these are "natural parks" or "national parks" which meet some fundamental principles that are not altered by human

"Therefera Romaña is a distinct cone as regards forest. They are prelatized, mathematically reorganized and in certain areas organized for touristism. The "health centers" are organized for tourists which can offer lower prices. There are wonderful places for recreation and therapeutic recreation very."

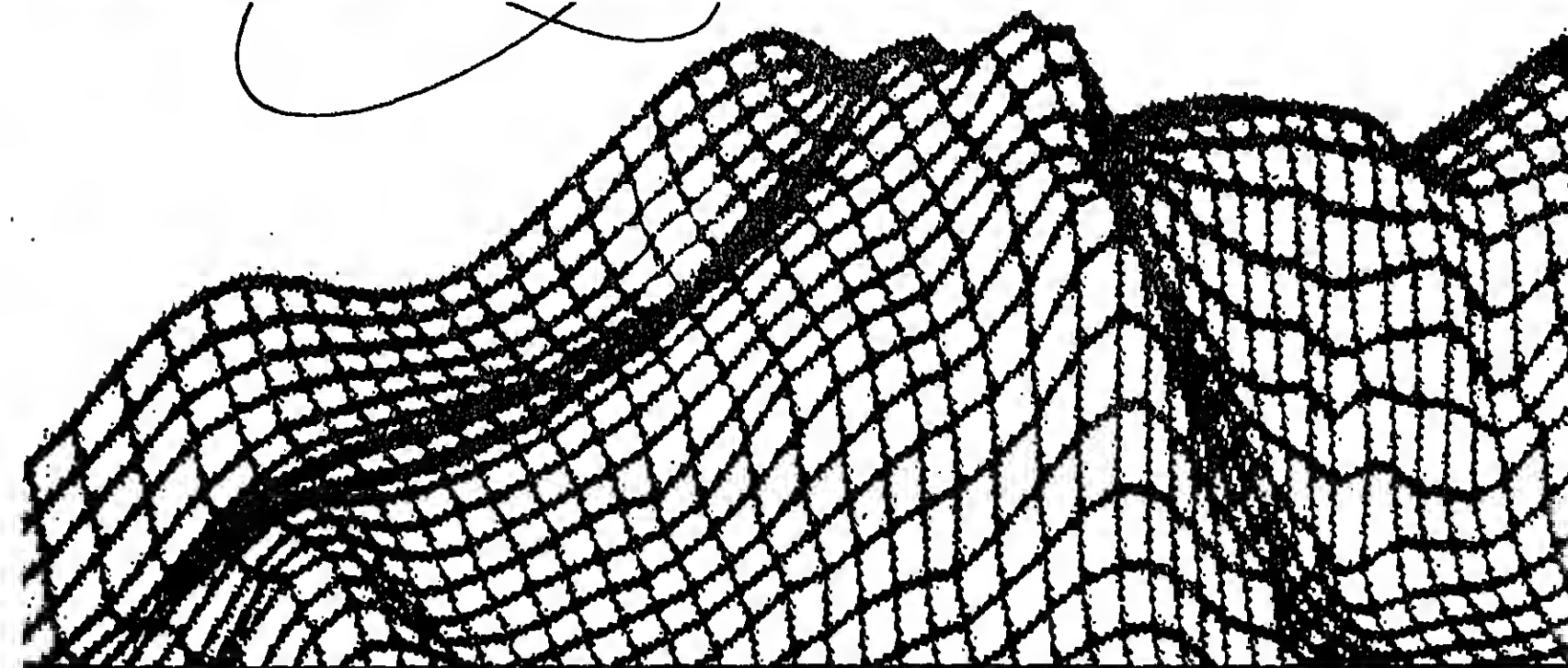
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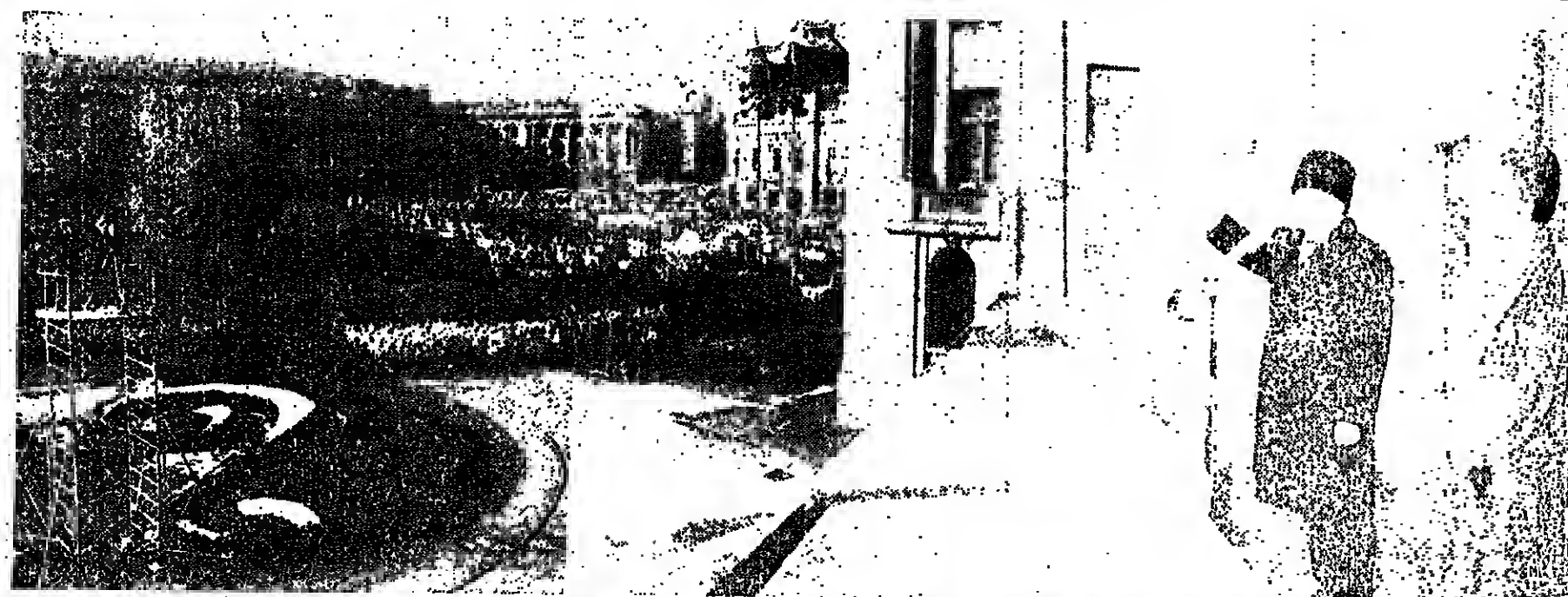
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# NICOLAE CEAUSESCU

**From the speech to the big civic rally marking the 70th anniversary of the creation of the unitary Romanian national state**



Over 120,000 citizens gathered, on Wednesday, November 30, in the morning, in Republic Square, in Rumania's Capital in order to honour, during a great and impressive event, the creation, 70 years ago, of the unitary Rumanian national state.

In the big square in the centre of the Capitol there were representatives of all counties and of Bucharest municipality — workers, peasants; intellectuals, students and pupils. They came to pay homage to the beloved homeland which free, master of its own destinies, lives the years of socialist fulfilment.

Most of them carried the country's flag and arms, portraits of Nicolae Ceausescu and Elena Ceausescu, the arms of the county they represented.

# ROMANIAN NEWS

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and wore tricolour scarves on both shoulders.

All those present in the big square enthusiastically welcomed Nicolae Ceausescu and Elena Ceausescu as they walked out of the Palace Hotel. These two had come to the olive rally wanted to convey the Peily General Secretary, President of Romania, Nicolae Ceausescu their feelings of love and high expectation for his restless sofly devoted to the continuous flourishing of the homeland, the development of all country's counties, the people's happiness and well-being, Romania's growing role and prestige in the world, to the general cause of socialism and peace.

Headquarters of the Party Central Committee Nikolai Ceausescu crossed the Republic Square through a truly live corridor, made of delegates of all the country's counties and of Bucharest municipality.

Scores of young men and women, joined in a large Union Hara in front of the Party Central Committee headquarters, thus wishing to revive a long-standing tradition — on occasion gripping symbol of the Romanian people's will of union, of unity, Nicolae Ceausescu and Elena Ceausescu were invited to join the Hara.

Then, from the balcony of the Central Committee headquarters, Nodjé Coussou made a brief and inspiring speech, kindly followed by all the participants in the great rally and, through the radio and television broadcast, by the whole country.

**Door comrades.**

On the occasion of our great anniversary of December 1, when we celebrate 70 years since the creation of the unitary Rumanian national state, I wish to address all of you who come to this great manifestation for the Union, to our whole people, a warm salute, the best wishes of success in all fields!

The creation of the unitary national state 70 years ago fulfilled our people's centuries-old aspirations after living united, after working together, in order to build a new, better, free and happy life.

Now, when we celebrate 70 years since the creation of the unitary national state, we can boast with justified pride that socialism alone has been able to ensure the general rise in the people's welfare, to ensure the consolidation of independence and sovereignty, to fulfill our people's centuries-old aspirations after a better, free and independent life.

As I declared shortly before, upon the conclusion of the great democratic forum, let us pledge to do

Let us honour the creators of the unity of the Chinese nation - the true maker of this historic act of the history of our homeland in general - with the achievements, with the resolute decision to carry out unflinchingly the Party's Programme of building the multilaterally developed socialist society and advancing towards communism!

At this great event too, I wish to assure my friends abroad, all the states of Europe, and throughout the world that the united American people master a firs destiny, wishes, to live in co- liberation and friendship with all peoples, to have life freely, the way it wants!

We wish to collaborate for peace, for dem-  
 onstration, for a more just and better world.

Thank you, dear comrades and friends, for the great manifestation paying homage to the proclamation of the unshaky Romanian national idea. I wish you ever greater successes in your activity, good health and happiness!

On Thursday, December 1, on the celebration of 77 years since the creation of the Austro-Hungarian Empire, the military band of the Ministry of War of flowers were laid on the Memorial to the heroes of the struggle for the people and the homeland's freedom for explanation and on the Memorial to the homeland's heroes in Bucharest.

Wreaths were laid on behalf of the Party General Secretary, President of the Republic, Nicolae Ceaușescu, of the Council of Ministers of the Romanian People's Republic, of the State Council and Ministry of the State most, the Grand National Assembly, the National Council and the Socialist Democratic Party.

Unity Front, the Ministry of National Defence and the Ministry of Internal Affairs, the Central Council of the General Trade Union Confederation, the Central Committees of the Union of Communist Youth, the Union of Communist Student Associations in Romania, the National Council of the Young Pioneers Organization, the National Council of Women, the Bucharest Municipal Committee of the RCF and the Bucharest Municipal Executive Council, the Council of Romanian Working People of Mag. Banat, and the Council of Romanian Working People of German Nationality, as well as the Council of various Bucharest clubs.

prizes. The winners were also held as hostages by the diplomatic corps. Present were heads of diplomatic missions accredited to Romania, other members of diplomatic corps.

On the same occasion of fireworks were held in the four Manastiri of the Alba Iulia district: the Benedictine Monastery of the Holy Michael, the Greek Catholic Monastery of the Holy Hieron, Clovea and Obelisk and of the Holy Purcell Hill. To follow the event, wreaths of willows, placed on other monuments, numerous medals.

As we informed you in our last issue, the country's supreme legislative forum — the Grand National Assembly — adopted in its Thursday, December 1 meeting the Law of the single national plan of socioeconomic development, the Law of the plan of developing agriculture, the food industry, silviculture and water management, and the Law of the 1989 state budget.

On the following day, the Grand National Assembly unanimously approved the Programme of self-maintenance and self-sufficiency for the adequate supply of the population with farm produce and industrial consumer goods in 1959; the Law of improving the economic-financial mechanism by bettering the price-fixing system; and the Law of improving the remuneration system for the stimulation of export production and exports.

Before the parliamentary session, the documents concerning Rumania's socio-economic development over the next year had been discussed by the Joint meeting of the plenum of the CC of the RCP, of democratic bodies and mass and public organizations,

Worked out under the direct leadership and guidance of President Neelue Caussest, the above-mentioned plans as well as the state budgets for next year are aimed at the further development of the productive forces of the country, the acceleration of the economic growth, the strong assertion of the new technological revolution and the new agrarian revolution, the rise of the national income, the permanent increase of the entire people's material and spiritual welfare. It should be particularly stressed that the provisions of these important normative acts meet the decisions of the Thirteenth Congress and of the National Conference of the Party, being intent to ensure conditions for the development of all activity sectors, for the fulfillment of the Party Programme of building the multilaterally developed socialist society and Khamatula's advance in communism.

An essential, defining element of the plan and budget for 1989, the characteristic of the social democratic system existing in the entire economic and social life of Romania, is the substantialization, development and elaboration of the decisions contained in these documents, together with the active participation of the workers, farmers, intellectuals, engineers, the collective management bodies in enterprises, research institutes, centrals, county people's councils, ministries and the other central bodies, which debated and improved plan proposals during the recently held working people's general meetings. Next, the draft plans and budget were examined and approved by the

(cont. on p. 3)



**this week's reportage** **A VILLAGE PREPARES ITS FUTURE**  
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## HISTORY AND ARCHAEOLOGY (PAGE 13)

# PEOPLE & IDEAS

**CLEAN  
AIR FOR  
THE EARTH**  
(PAGE 8)

# THE DEVELOPMENT STRATEGY OF ROMANIAN ECONOMY

# CHEMISTRY AND PETROCHEMISTRY

A DYNAMIC BRANCH WITH MODERN ORIENTATIONS IN THE STRUCTURE OF PRODUCTION. • STEPPED-UP DEVELOPMENT OF THE SUBBRANCHES WHICH TURN RAW MATERIALS TO BETTER ACCOUNT. • A TECHNICAL AND PRODUCTIVE POTENTIAL OF HIGH ECONOMIC EFFICIENCY. • THE CONTRIBUTION OF SCIENTIFIC RESEARCH AND TECHNOLOGICAL ENGINEERING. • MORE THAN 230 GROUPS OF PRODUCTS EXPORTED TO 100 COUNTRIES.

(PAGES 4-5-6)







THE DEVELOPMENT STRATEGY OF ROMANIAN ECONOMY

# CHEMISTRY AND PETROCHEMISTRY

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The present potential of Romanian chemistry and petrochemistry has been practically created in the postwar period. In 1938, Romania's best pre-war economic year, the national chemical industry turned out a limited range of products (smoke black, chlorides hydride and sulphuric acid, soda ash and caustic, synthetic ammonia, artificial fibers and yarns, butanol, pulp and paper, ethanoic acid, lacquers and dyes-tuff) in absolutely insufficient quantities for the needs of the economy. And all this in the conditions of a rich raw material base (oil, natural gas, salt, coal, etc), for whose capitalization world-reputed Romanian scientists had made highly successful researches and tests.

The whole production of 1938 is presently put out in 1.5 hours for ammonia, 14.4 hours for ethanoic acid, 1.4 days for artificial fibers and yarns, 1.8 days for smoke black, 2.5 days for chlorine hydride,

2.7 days for butanol, 3 days for caustic, 5.4 days for sulphuric acid, 7.9 days for soda ash. Adding to them were hundreds of other highly efficient products, so that at the beginning of the ongoing five-year plan period (1986-1990) the respective branch ensured an overall production volume, 1,200 times larger than that registered in 1938, in an extremely varied range of types and variants.

## DOSSIER

As part of its socioeconomic development strategy, Romania opted for the creation and stepped-up development of the chemical industry, in particular of its subbranches able to turn to better account raw materials — we were informed by Ion M. Nicolae, D.Eng., Minister of the Chemical and Petrochemical Industry. As a matter of fact, the sevenfold growth of the petrochemical industry over the 1965-1987 interval triggered essential changes in the economic of the whole branch, creating prerequisites for the Romanian chemistry and petrochemistry to reach a level similar to that scored by the developed industrialized countries. The chemization degree of crude grew over 1.8 times over the 1965-1987 period, preoccupations and efforts being focused on turning the country's limited resources to a better and more efficient account.

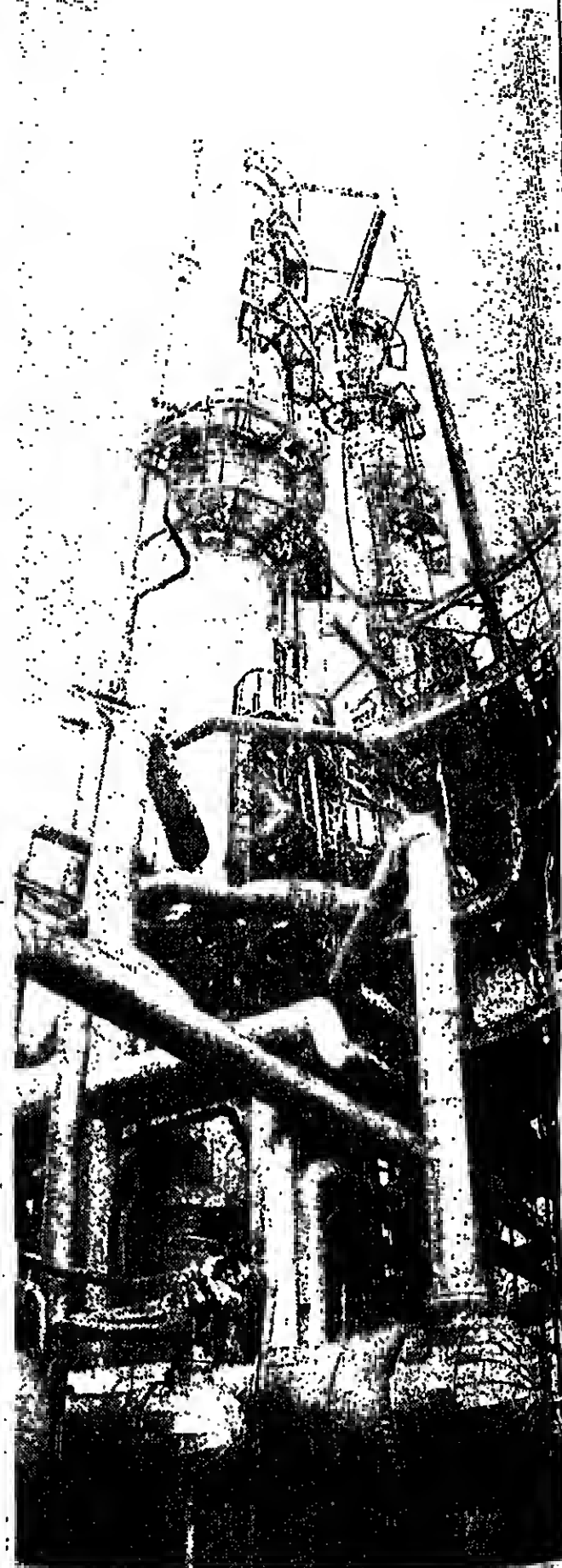
The evolution of Romanian chemical and petrochemical industry was marked, in the 1965-1987 interval, by the enrichment of the technical and material base of the entire branch. The stress laid on development, the substantial material funds earmarked by the state materialized in the construction and commissioning of

1,250 production units of chemistry and petrochemistry throughout the above-mentioned period. As a consequence — Ion M. Nicolae went on — today Romanian chemistry and petrochemistry are present in all Romania's 40 counties and in Bucharest municipality which covers almost 10 per cent of the overall national chemical output. This basic branch of Romanian economy offers today the image of an industry in full swing of development, modernization and diversification, with a socio-economic growth from 1965 to 1987, at an annual development rate of 19.5 per cent, higher than the average mark recorded by the whole national industry.

At the same time, over the interval new production facilities were set up, actually new subbranches, such as the production of synthetic fibers and yarns, esters, synthetic resins, dyes and coloring agents, obsolescent products, highly pure reagents, products of the fine synthesis chemistry and many others. The dynamic evolution of the chemical and petrochemical industry has contributed to a more marked growth of its share in the country's industrial productive co-

llect to nearly 20 per cent presently, as against 7.5 per cent occupied for by the respective branch in the overall industrial production of the country more than two decades ago.

The dynamic evolution of the Romanian chemical and petrochemical industry is obviously the outcome of the homo-growth scientific research and technological engineering which have placed at the disposal of units modern and extremely efficient technologies, results of an incontestable practical value. As a matter of fact the coordination of this sector is coordinated at a national level by the Central Institute of Chemistry to Bucharest which comprises units of research and design, centres of research raised near large chemical and petrochemical plants being integrated with higher education research. The entire scientific research and technological engineering network (comprising 27 units with more than 20,000 highly specialized staff), becomes increasingly involved in the solution of original technologies, able to turn to better account raw materials and consumed energies. In the conditions of solving highly competitive products. The results of homo-



Partial view of an installation from the Chemical Plant in Făgăraș (top right). Aspect of a section of the Făgăraș and Yarn Plant in Săvinești, the pioneer of the dualist production still preserving its quality of the product.



grown research, the quality of the product is preserved. In the 1971-1987 period, the volume of the entire branch was obtained on the basis of modern technology, while new investments rose to 97.88 per cent, the growth rate being 10.5 per cent. The growth rate of the entire branch was 10.5 per cent, the growth rate of the entire branch was 10.5 per cent.

## MODERN COOPERATION WAYS

For several years now, the Romanian chemical and petrochemical industry has promoted, either directly through its research institutes or big plants and productive units, or by means of Danubiana and Chitica foreign trade enterprises, modern collaboration and cooperation forms: the erection of productive units, cooperation in and specialization of production, the delivery of technologies and know-how, studies and designs, granting technical assistance, specialized personnel training, etc.

Another way used by Romania in this field is the creation of joint ventures for commercialization or production and commercialization. Among joint ventures commercializing Romanian chemical and petrochemical products in the international market there are: Arcol (Great Britain) Doctra (France), Romil (Italy), Conlichemie and Victorio Reiten (West Germany), Amrochem (USA) and Carochem (Spain). Also, the joint Romanian-Italian venture Rifi for production and commercialization, carries out its activity in Romania. Based in the town of Săvinești (where there is a big synthetic fibre and yarn plant), the venture has mainly in view the production and commercialization of acrylnitrile yarn.

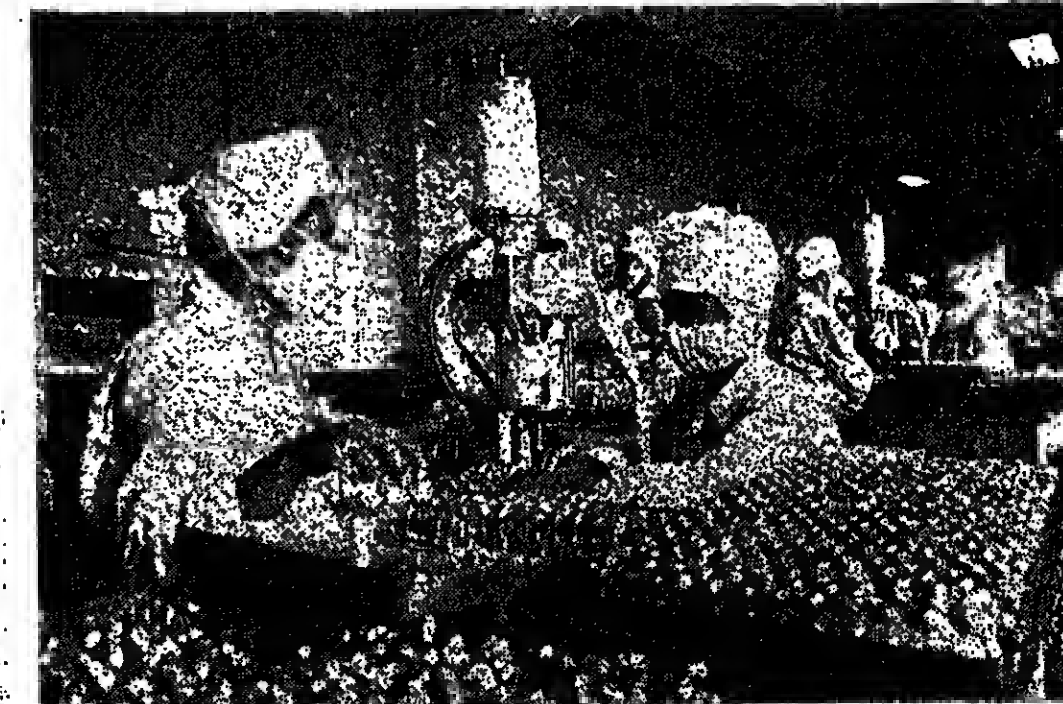
The above mentioned production and commercialization joint ventures make an important contribution to the development and diversification of Romania's trade exchanges, the extension of collaboration and cooperation with more and more countries in the field of chemistry and petrochemistry based on equitable, mutually advantageous relations.

raw materials, a series of enterprises with Romanian counterparts, etc. Over the last quinquennium alone, stressed Minister Ion M. Nicolae, out of a total of 1,700 studied and homologated technologies, more than 1,000 have been supplied to production at a national level or as productive plants. These original technologies aimed at rationalizing national raw materials, developing the fine synthesis chemistry, upgrading the quality of products and enlarging the production list, curtailing energy and material consumption. In the above-mentioned period the sectors of synthetic rubbers, plastics, chemical fertilizers, pest killers, drugs, detergents, dyestuffs and other fields scored an integral production on the basis of home-grown technologies, not to ensure the material and technical progress of the industrial and agricultural output, thus eliminating imports.

International statistics rate Romania among the most important manufacturing countries in the field of chemistry and petrochemistry with a dynamic growth ahead of the other economic branches since by stage, thanks to the dynamic evolution of the production of chemical fertilizers, synthetic rubber, plastics, chemical fibers and yarns, as well as in the continuous diversification of the list of organic synthesis products, drugs, dyestuffs, auxiliaries, detergents, lacquers, etc. Romania reached the level of the developed countries.

The increasingly larger potential of Romanian chemistry and petrochemistry is to be found

(Cont. on p. 6)



## ORIGINAL DRUGS

The fine synthesis chemical industry developed on accelerated rate, based on technologies elaborated by the Romanian scientific research and technological engineering. The drug industry, for example, has continuously developed and diversified its production — six times over 1965-1987 — covering, in a proportion of 94 percent, internal needs and offering important quantities for export. The Romanian drugs and pharmaceutical products are delivered to tens of countries on all continents.

Having big and modern productive units in Bucharest, Iasi, Cluj-Napoca and Tirgu Mures, the specialized Romanian industry has been considerably diversified (hundreds and hundreds of types of drugs and pharmaceutical products are obtained at present), making important contributions to an increasing world pharmacopoeia with original drugs. Among them mention should be made of: Cardiac drugs (used in treating acute coronary artery disease), Anti-cancer drugs (used in treating various types of cancer), Anti-infective drugs (used in treating various types of infections), Anti-allergic drugs (used in treating various types of allergies), Anti-asthmatic drugs (used in treating various types of asthma), Anti-hypertensive drugs (used in treating various types of hypertension), Anti-diabetic drugs (used in treating various types of diabetes), Anti-obesity drugs (used in treating various types of obesity), Anti-aging drugs (used in treating various types of aging), Anti-cholesterol drugs (used in treating various types of cholesterol), Anti-cholesterol drugs (used in treating various types of cholesterol), Anti-cholesterol drugs (used in treating various types of cholesterol).



Aspect from the bulkware warehouse of the Chemical Fertilizer Plant in Arod (top right). Snapshot from the Anilobias Enterprise, Tasi (middle). Aspect from the Plastic Goods Enterprise in Bucharest (bottom right).

## VARIOUS CHEMICAL FERTILIZERS

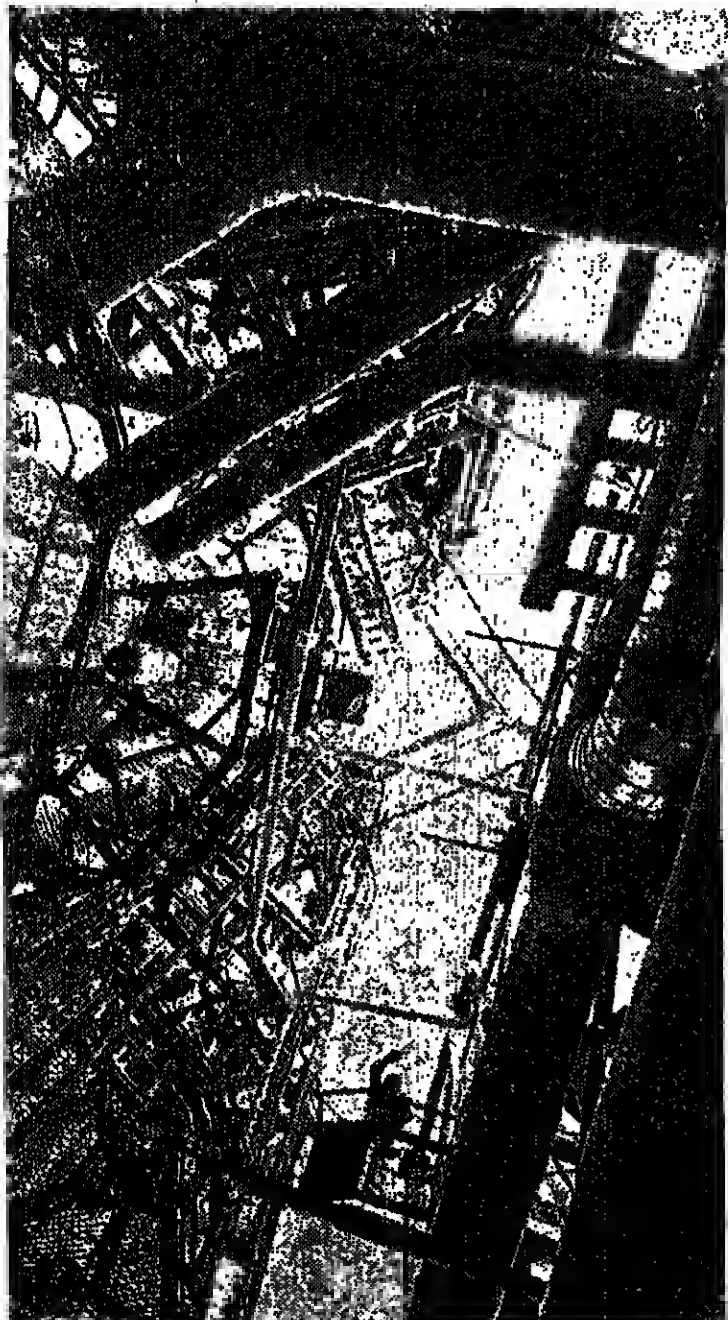
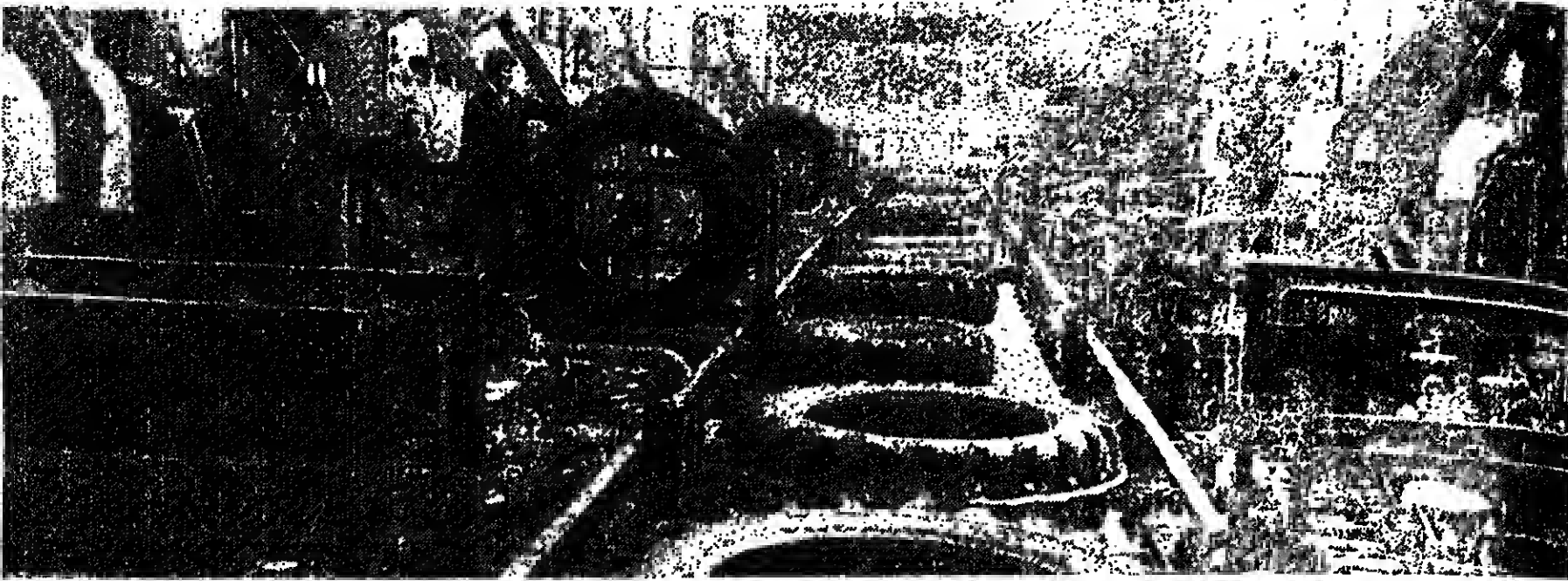
In 1933 Romania's production of chemical fertilizers rose to 1,100 tons. It was turned out in a rudimentary installation at Valea Călugărească, where only there is a plant producing hundreds of times more fertilizers in a much more varied range.

The Romanian output of chemical fertilizers has developed and diversified continuously; the technical and material base of the subbranch comprises 21 large works such as those of Craiova, Tirgu Mures, Turnu Măgurele, Slobozia, Bacău, Piatra Neamț, Arad, Navodari, Făgăraș, Victoria and Vitea Călugărească. These three units are now producing over three million tons of chemical fertilizers (100 per cent active substance) in a varied range: granulated urea, crystallized technical urea, ammonium nitrate, nitro-limestone, ammonia sulphate, NPK-type complex fertilizers, diammonium sulphate, triple and simple superphosphate, liquid fertilizers with nitrate (directly applied in soil or introduced in irrigation water), etc. In 1989 the fertilizers output will rise to 4.5-5 million tons (100 per cent active substance).

Meeting entirely the demands of the national agriculture, the fertilizers industry ensures at the same time important export availabilities. Such products delivered to some 30 countries, the export volume increasing three times over the last decade. Presently, Romania is one of the main world suppliers of chemical fertilizers.







## SIGNIFICANT GROWTHS

Romanian chemistry and petrochemistry offer today the picture of two industrial branches in full swing of development, modernization and diversification, with a marked dynamism. In the 1965-1985 interval, for instance, significant growths were recorded with the main products, above the average value registered by the whole branch: aluminum — 27.7 times, high analysis chemical fertilizers (100 per cent) — 13.3 times, artificial yarn and fibre — 10.2 times, synthetic yarn and fibre — 70.5 times, polyethylene — 11.1 times, polyvinyl chloride, drugs, synthetic rubber, tyres etc.

These qualitative increases, coupled with concerns with raising the products' competitiveness, resulted in important export increases over the same interval: synthetic yarn and fibre — 138 times, drugs — 45 times, chemical fertilizers — about 210 times, artificial yarn and fibre — 15 times, detergents — 23 times, vitamins and dyestuffs — 21 times, plastics, synthetics and processed products — 5.8 times, yarn — 4.6 times etc.

During the current quinquennium (1986-1990) Romanian chemistry and petrochemistry continue to see a marked dynamism. While the total volume of Romanian industrial production will grow by 31-37 per cent compared to the 1981-1985 three-year plan period, chemistry and petrochemistry will record a 50-51 per cent increase, with an average annual development rate of 8.5-9.0 per cent. This branch has further oriented primarily towards the superior processing of indigenous raw materials. Large increments are to be registered in the synthetic chemistry, small-lump products, highly pure reagents and other pure chemical substances.

(cont. from p. 5)

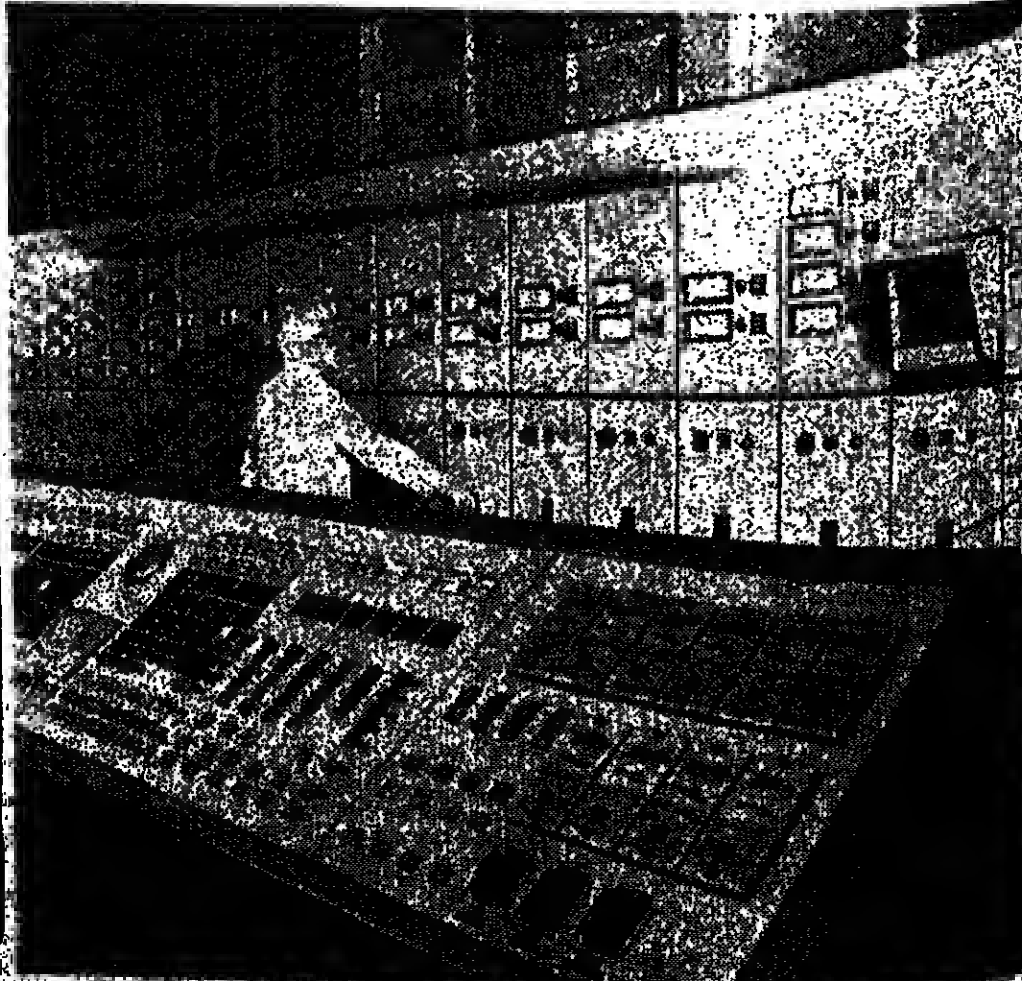
also in the country's commercial exchanges. The chemical and petrochemical products account for some 25 per cent of Romania's overall export volume. This branch supplies partners in over 100 countries on all continents with approximately 230 groups of chemical and petrochemical products. At the same time, thanks to the experience acquired by Romania in this field, a series of studies such as Jordan, Pakistan, Turkey, People's China, Egypt, the DPR of Korea, Syria, the USSR, Yugoslavia, Iran, have asked Romanian specialists to assist them in building industrial processing units as well as chemical plants.

In the ongoing quinquennium (1986-1990) the country's overall industrial output is in grave by 31-37 per cent as against 1985, while the chemical indus-

try will secure an increment of 50-51 per cent at an annual average growth rate of 8.5-9 per cent. Larger increases are planned for the small lumpage and fine synthesis chemistry (drugs, dyestuffs and coloring agents, reagents, highly pure substances for microelectronics, etc.), plant protection chemicals whose volume will almost double, in comparison with the achievements of the preceding quinquennium. At the same time, the modernization drive sweep over 510 installations and 300 major technologies, as well as 870 products, thus helping to raise the economic efficiency of the branch. The whole production growth targeted for the ongoing five-year plan will be obtained by increasing labour productivity. The overall export volume of chemical and petrochemical goods will go up 1.7 times as compared in the preceding quinquennium.

The growth rate planned in the current five-year plan period is all the more so significant as the development process takes place in the conditions of stressing the progressive passage from large lumpage chemistry to that of the synthesis, of new and improved plastics as regards the specialization of the chemical and petrochemical industry on sub-branches. In the same time, the first of all the production fields ensuring a high level of efficiency at very reliable exploitation of the raw materials and energy-consuming products.

Aspects from Danubius  
Tyre Factory, Borsos  
Chemical Plant and the  
Tribune of the  
Jilava.

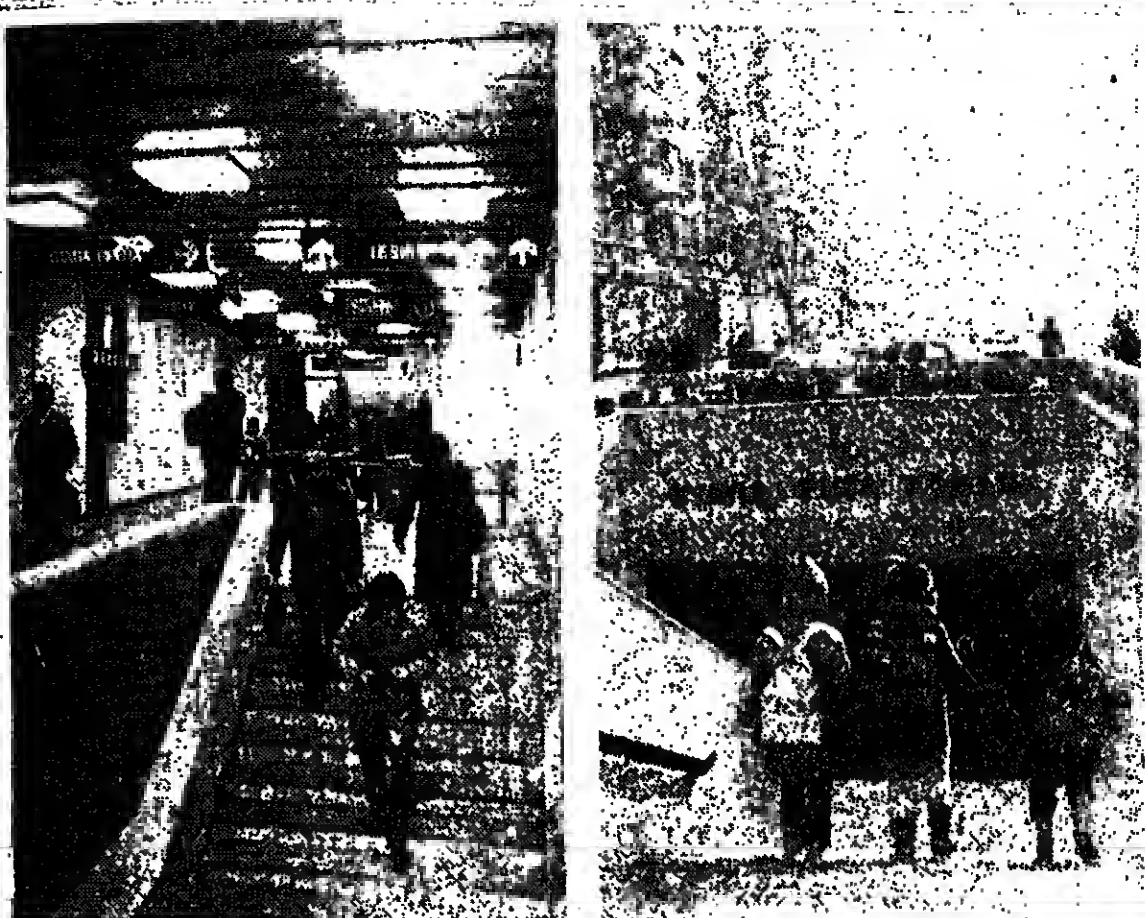


## THE MIDIA — NÄVODARI PETROCHEMICAL WORKS

Besides the petrochemical works of Borzești, Brazi, Teiceni, Pitești, Rimnicu Vilcea and Timisoara a new and modern plant was connected to the productive circuit of Romanian petrochemistry a few years ago: that of Midia-Nävodari. After the first unit was commissioned and started to operate in 1970 — the installation of atmospheric and underpressure distillation, new and important units have been commissioned along the years: methanol isomerization, paraxylene separation, belated carbon-producing equipment and many others.

Covering some 400 ha (of which 120 ha reclaimed from the Black Sea, the Nävodari and Corbu do Sun lakes), the integrated plant ranks among the largest and most updated in Romania. It is conceived according to a modern, compact design, directly linked with the Danube-Black Sea Canal (especially through its branch Portia Albä-Midia-Nävodari), as well as with the Constantia sea port.

Possessing 30 production and auxiliary units, the plant is a true creation of Romanian engineering and technology. It supplies the national economy with a varied range of fuels, petrochemical raw materials of great importance for the home needs, as well as for export: polyethylene of high and low pressure (in a varied line), polypropylene, etc.



## NEW UNDERGROUND STATIONS

Two stations have recently been opened along the second mainline of the Bucharest Underground: the Ploaia Romana and Constantin Bräncoveanu.

The Ploaia Romana station was achieved through special technical solutions imposed by the need of ensuring a round-the-clock flow of tubes throughout the segment. Access to the station is made through two escalators doubled by stairs leading to the platforms.

Each measuring 120 metres, the travertine, marble, granite and faience covering the walls create a pleasant atmosphere. From the point of view of the passengers flow, the new station can be compared with the UniversitÄti one. The Constantin Bräncoveanu station helps improve transport in the southern area of the Capital, being able to handle 30,000 travellers per

hour and day. The new station, namely the 32nd in the underground system, has modern automated installations for traffic control and public service. Underground workers are now working on the new station of the Victoria Square, along the third mainline, with which the Bucharest underground will cover a total length of 60 km.

## THE M-5220 MONITOR

Following in line with the medical apparatuses designed and built by the Institute of Scientific Research and Technological Engineering for Electronics, the M-5220 monitor is the simplest instrument designed for medical units specialized in the diagnosis of the cardiovascular diseases: it monitors the cardiac and respiratory rhythm, temperature in four points simultaneously, diastolic and systolic pressures. At the same time the device displays waves corresponding to biological signals: alghorhythmically, as well as the dimensions measured. Achieved with a microprocessor, this monitor allows for data to be processed at a computer unit.

## THE ROMANIAN LANGUAGE IN THE LATIN AREA

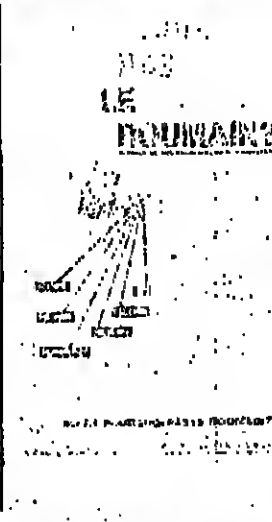
A poster (see reproduction) has been recently released at a French university, popularizing the study of the Romanian language.

It is an action taken by the Latin Union, in an attempt to seek out new and efficient ways to know the Romanian language, culture and civilization.

Measures to this effect were established in 1981 during the colloquium called "The Presence of the Romanian Language in France and Italy", organized at the Paris III University, enjoying a broad international attendance. The agreements at the colloquium were published in two volumes and later on, released in France and other countries through the agency of the International Centre of Romanian Studies (CIREU).

Professor Georgeo Dea from the Bucharest University, a former lecturer of Romanian language with the Paris III University, gave at this international, adding that together with his colleague Alvaro Racheoli (the Sorbonne Nouvelle University) he is working on a handbook of Romanian language called *Pratiqua da romanian* explained, also falling in line with the measures initiated by CIREU, sponsored by the Latin Union.

The handbook will place at the disposal of all those concerned useful data on the formation of the Romanian people and language, being a practical and, why not, an invaluable instrument of learning the Romanian language.



Para written by M. MILA-ESCU, C. MARIAN, C. LUTU, M. ROSCA, Photos by AGROPRES and ELENA GURREA.

## DIMBOVITA RIVER THESE DAYS

Several events are being recorded these days on the site of the complex engineering of the river Dimbovita which crosses the Romanian capital, meant to improve a new geographic physiognomy to this river.

For instance, the Vilen-Gilina section, on which work began last December, has been completed.

The new waste water collector canal has been built on a distance of 7.5 km, while the clean water basin, that is, the construction bed of the Dimbovita already stretches on some seven km.

Adding to these important projects are the hydrotechnical structures at Sere and Focșani which assembly has begun. Seen in the fact the starting point for a better section of the river having a length of 4.2 km, the new river bed (10 m wide and 8.5 m deep) and a raised sewer have been excavated and put to use. An important operation was the building of the gallery sheltering the bottom, water, electrical cables and other pipes, a gallery which undercrosses the Dimbovita.

When work on the Sere and Focșani hydrotechnical structures is completed, this section of the Dimbovita will virtually be ready too.

Another important spot in the complex development of the river Dimbovita will be the future part of Gilina. The wharf on which work began last December, has been entirely created. Excavation operations in the docks of the future port whose area is 200,000 sq.m, have already been completed. The navigable bed starting at this point is under construction and will be 60-70 m wide and 4-5 m deep.

Another place where work is in progress is the area of completion of the lake in the Văcărești area. A big dam is being erected here, which will hold back the water, creating a lake of 100 ha. This modern engineering and urbanistic project which will alter both the river and the surrounding landscape, Bucharest will have a hydrotechnical structure and a length of over 40 km.



## INDUSTRIAL PROCESS CONTROL

It has now become a usual practice to follow "Deltec" industrial processes by means of computer technology. The computer plant in Bucharest designed the SPOT 83 industrial process control system. It is presently used by the aluminum plant at Slatina in order to manage the electrolysis process, thus saving important quantities of electric power. The same system is tested by the integrated chemical plant at Rimnicu Vilcea.

The SPOT 83 industrial process control system is also used for electric power consumption (airconditioning of the Bucharest Electronics Computers and the Zafira Electric Network Enterprise as well as for non-destructive ultrasound control at IAVC and IPHOMET in Bucharest).

The system achieved by the computer factory of Bucharest operates with good results also at Calderas, in Colombia, where it is used for the control of generating sets of the Power Station, as well as in the GDR and the USSR.



The Mining Equipment Enterprise in Solu More has started mass producing the M-130-type mechanized supporting installation, an equipment handling superior technical and functional parameters according to a substantial growth in labour productivity. The experts of that enterprise have also built the technological line necessary for manufacturing the new equipment.

This year, the constructive effort of several mining machines and installations manufactured by the Mechanism Enterprise in Timisoara has been redesigned. As a result of this, besides bettering the technical parameters, the M-130-type mechanized supporting installation, an equipment handling superior technical and functional parameters according to a substantial growth in labour productivity. The experts of that enterprise have also built the technological line necessary for manufacturing the new equipment.



# THE FINE MECHANICS ENTERPRISE



**YOU CANNOT PRODUCE WELL UNLESS YOU CONTROL!**

If, generally speaking, "man is the measure of all things" as Protagoras put it, we must stress that the quality of your products and the productivity of your labour are strictly conditioned by the use of MEASURING AND CONTROL APPARATUS.

The post- or in-process sizing of your products supplies you the information through which you can become EFFICIENT as a producer.

It is this efficiency (viz. quality, producti-

vity, competitiveness) that the Fine Mechanics Enterprise (IMF) of Bucharest has in mind when offering its beneficiaries:

- measuring and control apparatus for lengths, pressures, temperatures, discharges, times and speeds;
- special tools (diamond and sinter-carbide metal tools), holders, high-accuracy and fineness devices and dies, having a high degree of productivity and durability.



## MEASURING AND DIMENSIONAL CONTROL APPARATUS AND INSTRUMENTS

- dial gauges ● bore dial gauges ● gear measuring instruments; ● threaded conic gauges for the oil industry.
- circular dial snap gauges ● gear pitch-error and gear-tooth-thickness measuring instruments ● reading ball-gauges; optical read-out devices and rules.

## IN- AND POST-PROCESS SIZING GAUGES

- They are built according to modern principles, with pneumatic inductive, piezoelectric transducers, whose signals are processed and displayed analogically or numerically in modular-type electronic units:
- pneumatic post-process sizing gauge - SUPERJET ● pneumatic post-process sizing gauge - ELSUPERJET ● post-process sizing gauge with electric contacts ● inductive electronic post-process sizing gauge ● roughness measuring post-process sizing gauge; smoothness measuring gauge (electronic levels).
- in-process sizing gauge for continuous exterior cylinder surfaces with one and two measuring points ● for continuous exterior surfaces and for continuous interior cylinder surfaces with two measuring points ● in-process sizing gauge for centreless grinding machines ● in-process sizing gauge for exterior diameters of narrow surfaces ● copying systems mounted on machine tools for processing through copying after a pattern.



## AUTOMATION ELEMENTS AND MECHANISMS

- Programmers ● electromechanical impulse counters ● programme control for automatic washing machines ● discharge counters with oval wheels ● electromechanical tachographs for motor vehicles ● complex speed measuring installations for locomotives and subways.

## FOR PRESSURE INDUSTRIAL CLOCK-TYPE APPARATUS, INSTALLATIONS AND TEMPERATURE CONTROL

This apparatus family includes pressure switches and thermostats. They are indispensable in the automation of starting and stopping installations using fluids whose temperature and pressure must be maintained within certain preadjusted limits. Pressure switches and thermostats are made by the Fine Mechanics Enterprise in a wide variety according to the pressure and type of media they are mounted on and the conditions of the environment.

# REMEMBER THE IMF TRADEMARK



## SINTER-CARBIDE METAL PRODUCTS

The main groups of products bearing the "CARME-SIN" mark - which are the object of the Bucharest Fine Mechanics Enterprise's production programme - are the following: sinter-carbide metal brazable tips and inserts for metal cutting; sinter-carbide metal inserts for mining tools; sinter-carbide metal inserts specific to the wood industry, building materials and extraction industry; products for drilling installations; dies for screws and nuts; dies for roll bearings; other types of products upon the foreign partners' demand.

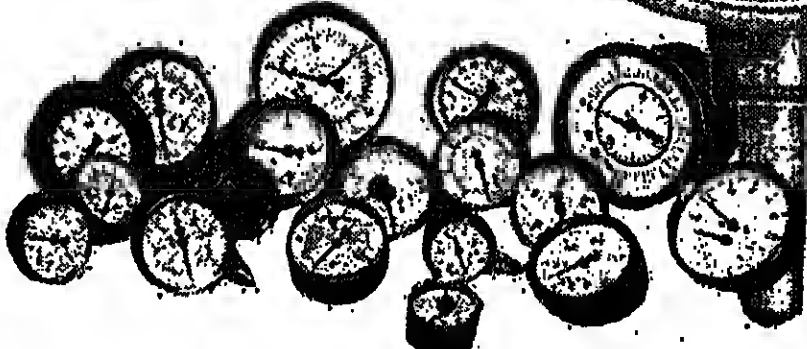
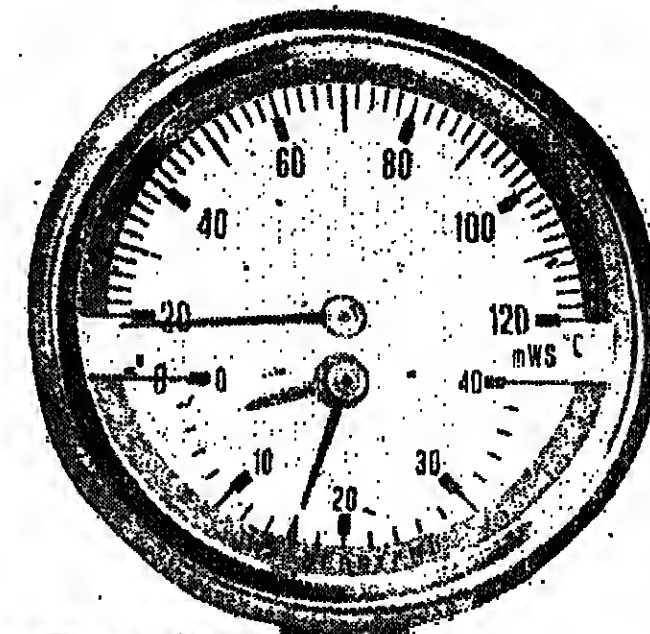
According to the concrete destination indicated by the end user, these products are executed out of the PKMG groups of carbide metal powder, after ISO international standards or according to other requirements specified in the order.

In order to increase the durability and performances of the sinter-carbide metal inserts, the method is applied of coating them with extra-hard layers of titanium carbide, giving the inserts an increased durability of up to 300 percent, as compared to the normal execution.



## PRESSURE GAUGES

Through the great diversity resulting from constructive variants based on measuring limits, accuracy, diameter, connection and scale type, the Fine Mechanics Enterprise can satisfy the most exigent demands of its clients (standard pressure gauges or of special construction, upon demand). There are: ● general use industrial manometers ● vibration-proof manometers ● corrosion-proof manometers ● capsule manometers ● double indication monometers ● manometers-thermometers.



## DIAMOND TOOLS

The processing of ferrous and non-ferrous metals, of sinter-carbide metal, stone, concrete, ceramic and glass - through modern methods - calls for the use of diamond tools on an ever larger scale.

The manufacturing programme of this kind of tools is achieved at IMF on the basis of the licence purchased from WINTER firm of West Germany and is currently in full swing as a result of the growing demand. It comprises the following more important groups:

- diamond mills with metallic or resinous binder of various shapes and sizes, with cubic boron nitride.
- diamond tools for construction-material processing
- diamond tools with galvanic binder
- honing diamond blades
- diamond pastes
- diamond tools for trimming and shoping abrasive stones
- chamfering tools with extra-hard materials from diamond polycrystals or cubic boron nitride
- diamond drawing dies.

## AND THE EXACT TIME

WHICH YOU CAN LEARN AT ANY MOMENT BY LOOKING AT THE DIAL OF THE WATCH WHOSE TRADEMARK OREX IS A GUARANTEE OF ACCURACY. BUILT IN SEVERAL HUNDRED MODELS BY IMF, THE WATCHES - MECHANIC OR QUARTZ-BASED ANALOG - MEET THE FINENESS OF YOUR AESTHETIC TASTE AND GIVE YOU THE EXACT TIME.



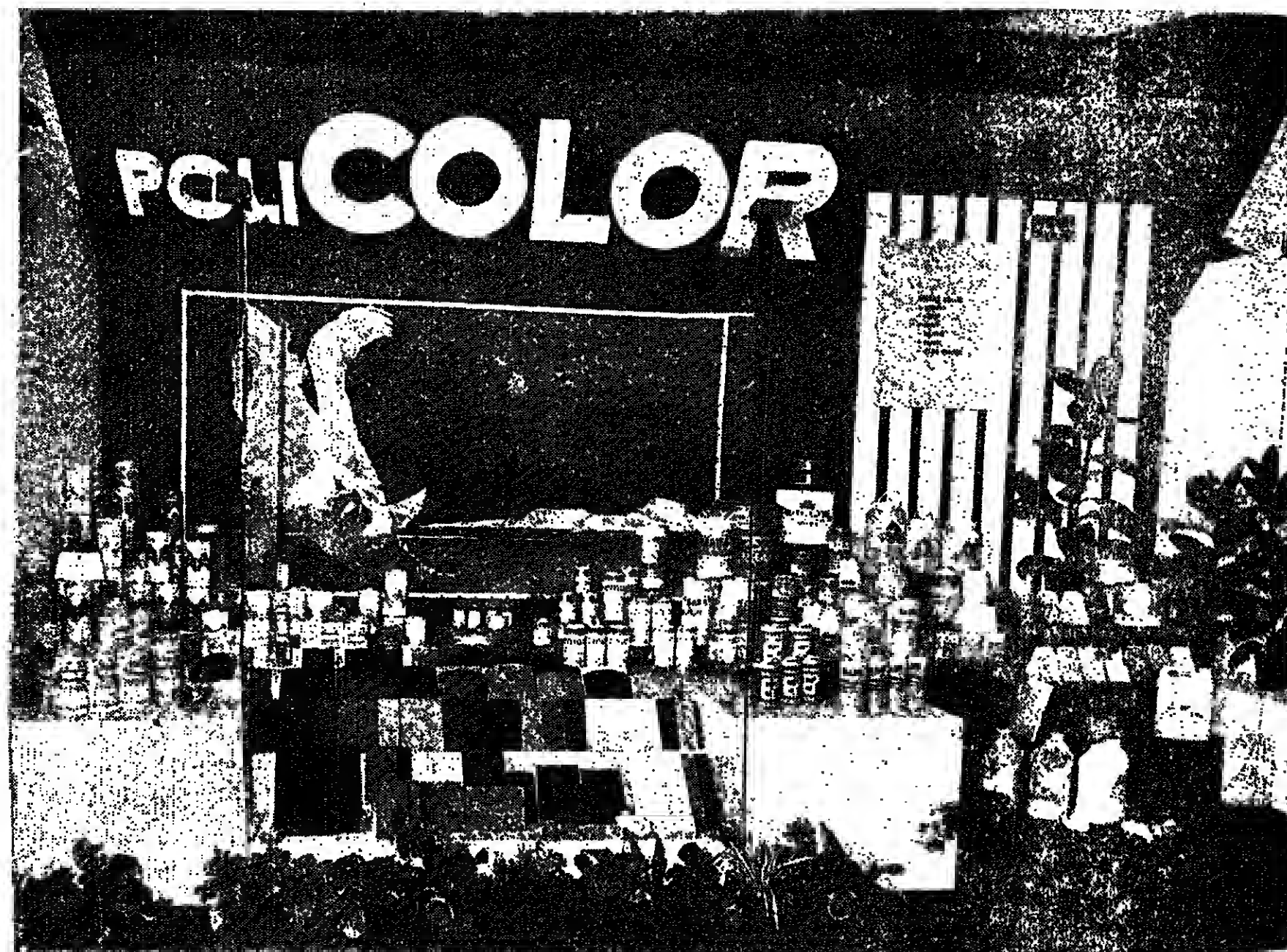
**MANUFACTURER:**  
**THE FINE MECHANICS ENTERPRISE**

ROMANIA ● BUCHAREST ● 9-19 POPA LAZAR ST.  
PHONE 35 00 00 / 290 ● TELEX 11 583

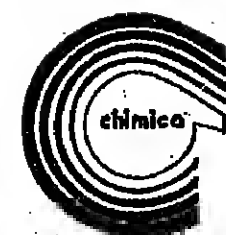


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## CHIMICA IN THE WORLD



ICE Chimica's export list covers over 170 groups of products.

This wide range of chemical products are marketed through economic relations with more than 100 commercial firms in 71 countries.

The products exported by ICE Chimica are remarkable by their competitiveness, high quality and continuity in the foreign markets. ICE Chimica, which is one of the world's top exporters of fertilizers, and holds an important place in the exports of medicines, cosmetics, varnishes and dyes, paper, cardboard and items made of them, has become a familiar presence in international trade.

Among the products which are in great demand in the foreign markets we are mentioning: nitrogenous

fertilizer, complex fertilizer (nitrogenous, phosphatic, potassic), writing, printing and newsprint paper, wrapping paper, various paper and cardboard items, original and traditional drugs, cosmetics, varnishes and dyes, dyestuffs and other products.

ICE Chimica is a partner of three joint trade companies: AMROCHEM - USA, ROMITAL - Italy, CON-TICHEMIE - West Germany, which also contribute to the marketing of the enterprise's products.

Moreover, our enterprise offers merchandise to other joint companies with Romanian membership, such as ARCODE - England, DECOFRA - France, VICTORIA REIFEN - West Germany, TERHELLAS - Greece, SOMAROMIMPEX - Morocco.

For additional information please apply to

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## THE HYDRAULIC EQUIPMENT ENTERPRISE RIMNICU VILCEA • ROMANIA

### ● ELECTROHYDRAULIC SERVOVALVES

### ● DIRECTIONAL CONTROL HYDRAULIC EQUIPMENT

- valves
- directional valves
- controllers
- regulating valves
- needle valves

### ● HYDRAULIC EQUIPMENT FOR CLAMPING SEMIFINISHED PRODUCTS ON MACHINE TOOLS:

- work supports
- swing clamps
- minor cylinders
- collet chucks
- high pressure hand pumps
- vices
- pumping systems

### ● FILTER EQUIPMENT:

- suction filters
- pressure filters
- return filters

### ● PNEUMOHYDRAULIC ACCUMULATORS AND ACCESSORIES

### ● HYDRAULIC CYLINDERS

### ● HYDRAULIC PUMPS

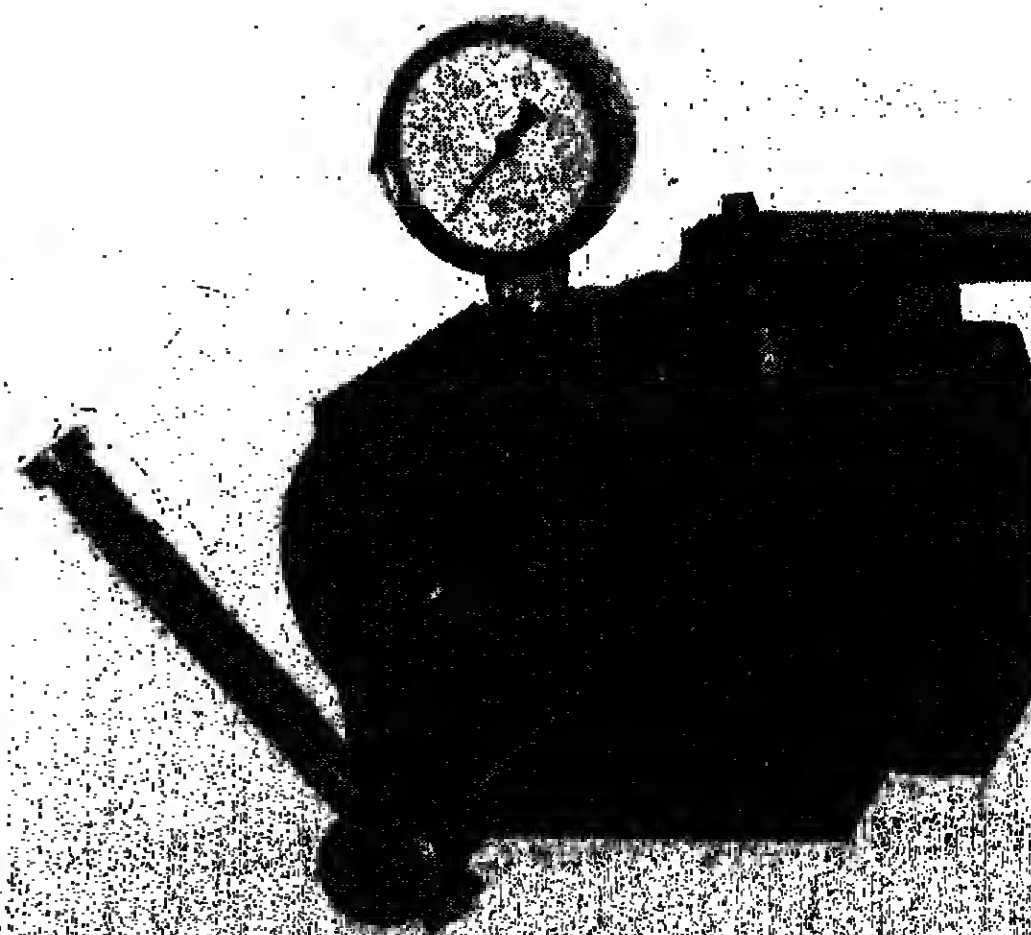
### ● LUBRICATING EQUIPMENT

- progressive lubricators
- volume lubricators
- oil lubricating devices
- grease lubricating devices
- two-way lubricators
- two-way lubricating devices
- resistances
- injectors
- safety and non-return valves

### ● VARIOUS HYDRAULIC EQUIPMENT

The Hydraulic Equipment Enterprise in Rimnicu Vilcea offers technical assistance for the products ordered, upon request.

Moreover, it can design new products, in keeping with the end users' needs.



**EXPORTER:**  
**ICE INDUSTRIAL EXPORT IMPORT**  
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# ELECTRONUM YOUR SAFEST BUSINESS PARTNER

Marketing Romanian electronic products and services as well as economic cooperation in the field of the electronic industry are carried out by the ELECTRONUM foreign trade enterprise.

ICE ELECTRONUM'S export programme includes the following lines of products:

- Telecommunication apparatuses and equipment, servicing included, starting from design up to training and maintenance. From this line of products mention should be made of: telephones, urban, interurban, international and institutional automated telephone exchanges. Exports of such products to Greece, the USSR, Czechoslovakia and the GDR have become a traditional practice.

- Measuring and control apparatuses, of which ampermetres, voltmeters, wattmeters, electric metres, flow-metres, steam-flow metres, logameters are delivered to Poland, Syria, Iraq, Pakistan, Sudan, the GDR and Czechoslovakia.

- Automation elements, equipment and installations for all the economic and social sectors.

We shall enumerate some subgroups of products: field and panel automation equipment, distribution and control electrical equipment, automated equipment and systems controlling technological processes in all economic branches, transmission and data processing equip-

ment, teletransmission and data processing equipment, machine tools, control equipment, automated testing equipment.

Also on offer are personal installations and equipment as well as turn-key deliveries. Increasing are the deliveries to countries such as the USSR, Egypt, the GDR, Czechoslovakia, Iran, Iraq, Bulgaria.

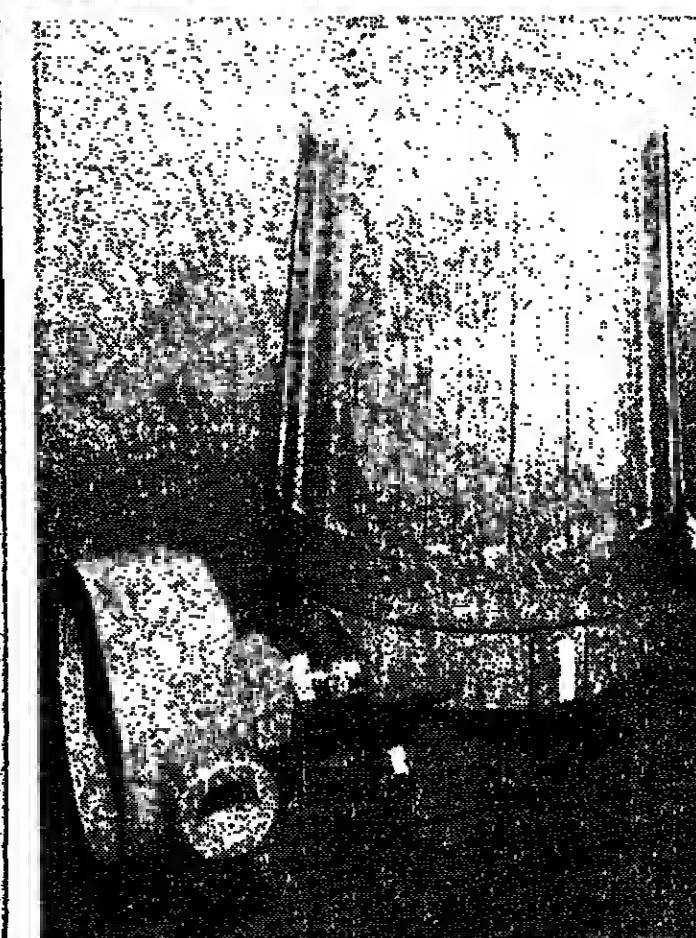
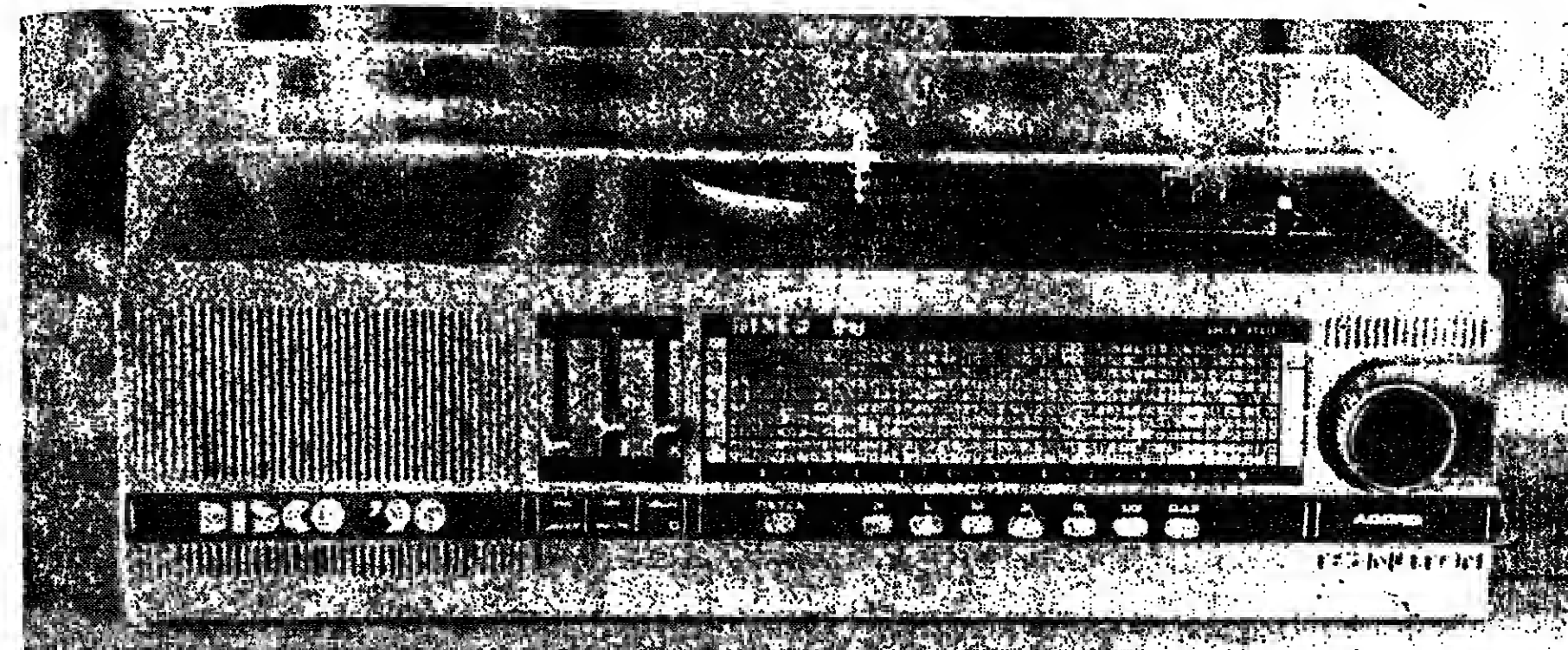
- Computer technology equipment such as: medium-capacity computers, minicomputers, microcomputers, personal computers, graphical systems, invoicing and bookkeeping machines, peripheral equipment. These products are exported to People's China, Czechoslovakia, the USSR, the GDR, Switzerland, Austria, West Germany, the USA.

The electronic components cover a wide range of diodes, transistors, integrated circuits, resistors, condensers, etc and are exported to Bulgaria, Czechoslovakia, the GDR, Poland, France, Italy, the United States etc.

Consumer goods such as radio receivers, radio cassette recorders and tv sets. These products are exported to countries such as West Germany, Britain, the Netherlands, Czechoslovakia, the GDR, the United States.

Also taking place through ICE ELECTRONUM are the export of licences and know-how, the granting of technical assistance and software.

**ELECTRONUM**  
BUCHAREST - ROMANIA



ICE ELECTRONUM imports a series of equipment, apparatuses, electronic components and various materials for the electronic industry and audio-video consumer goods.

An important partner in the export and import conducted by ICE ELECTRONUM is the Soviet Union.

ICE ELECTRONUM - Bucharest collaborates with the Soviet enterprises V/O ELECTRONORGTEHNICA, V/O STANKOIMPORT, V/O MASHPRIBORINTORG, V/O TECHMASHEXPORT, ENERGO MASHEXPORT, V/O TEHNINTORG, V/O

Supplied to the USSR are adjustable drives for machine tools, automatic telephone exchanges, computer technology, while that country exports to Romania electronic components, technological equip-

ment for the electronic industry, computer technology and audio-video consumer goods.

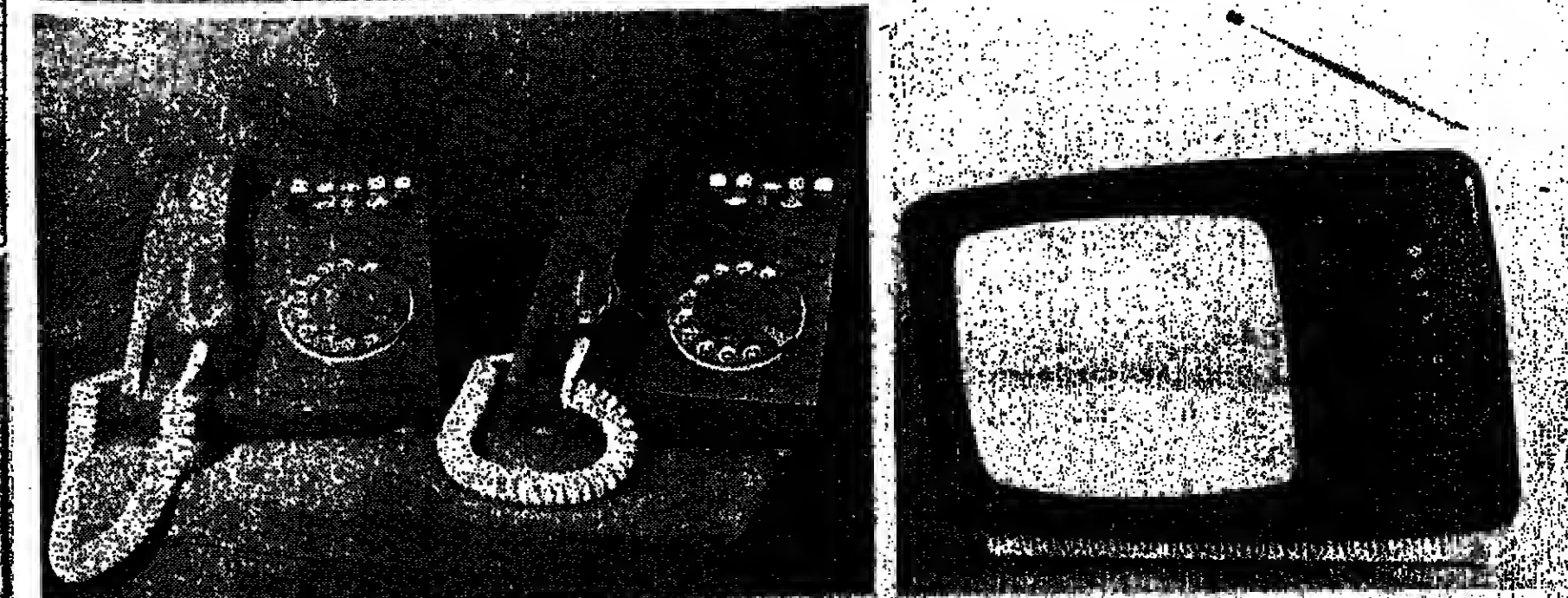
The collaboration with the Soviet foreign trade enterprises also accounts for the cooperation in production, that is Soviet electronic components are used in manufacturing electrical drives, computer technology equipment and automated telephone exchanges to be delivered to the USSR. At the same time very important is the ob-

servance of all delivery dates, especially as concerns the electronic components which are vital to the rhythmical realization of the equipment production plan.

According to annual mutual exchange protocol stipulations, the volume of the exchanges between ELECTRONUM and the Soviet foreign trade enterprises is set to grow every year.

For further information please contact our specialists.

**ELECTRONUM**  
BUCHAREST - ROMANIA



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FOREIGN TRADE COMPANY  
BUCHAREST • ROMANIA

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# MINOLTA GREETSS ROMANIA

MINOLTA's philosophy is to view copiers and the technical assistance granted to end users as a whole. It is easy to expect the most of the inventiveness or the products of a big producer, but the fact that a customer takes it for granted that he benefits by the best technical assistance means much more to MINOLTA. This is the reason why copiers, laser printers, telefax and text systems come ever more frequently from MINOLTA.



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REPRESENTATION IN ROMANIA: Export-Consult, Holzi Bucuresti AP, 25/27, 2-4 Laleasa St., B-7000 Bucuresti, Tel. 01/22 01 11, Telex 120 000 MINOLTA

## THE CONTEST OF STUDENTS-CREATORS

Between December 8 and 10, the annual University plays host to the national stage of the National Contest of Student Scientific and Technical Creations. Less than a month after the conclusion of this year's National Conference of Students' Scientific Circles, thousands of higher education creators selected through tough competitions organized by university centres are now gathered in Rector. The 26 sections discussing the works are as many research guidelines passed by the National Council for Science and Technology. For example, here are some of these sections: the development of the energy and raw materials base; materials for the electronics, scientific engineering, microelectronics and aerospace industries; industrial manipulators and robots; microelectronics; biotechnology; microengineering; programming; design; non-routine and technologies; transistors and optical protection.

Which are the rules of the contest? Unlike the event held in November, when scientific dissertations were delivered, the present competition demands that participants should present their researches under the form of posters in an exhibition. The bureaus of every section and the central commission will single out the best papers.

The central commission including representatives of the Ministry of Education, the Union of Communist Students' Associations, the University, industrial enterprises which will directly benefit from the works, will announce the winners. The commission has already established a Grand Prix, another prize for originality, one for interdisciplinary approaches and an award for fundamental research.

Besides these distinctions, each section will award a prize for the most valuable paper, while a few other special awards are bestowed by governmental economic departments.

## THE FAIR OF TOMORROW'S MASTERS

Young Romanian specialists took part in the 21st annual exhibit of the Fair of Tomorrow's Masters, organized at Leipzig (G.D.R.). They won 10 distinctions which rewarded the results of researches made in high-tech fields — computer technology, information processing, flexible systems, optical-mechanical, audio equipment, chemistry etc. Romania's team, in charge of the technical-scientific department of the Central Committee of the Union of Communist Youth, supplied as well the above-mentioned information, adding that the year's exhibit at the Leipzig fair was the first time a Romanian team, comprising young researchers of 11 countries.

## TUNNEL GEOMETRY

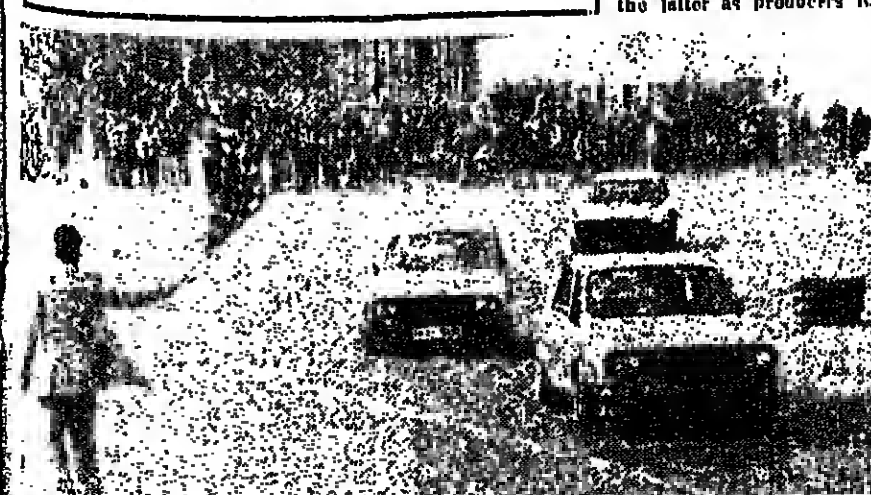
The Institute of Railroad Design by Bucharest came up with a new method concerning the geometry of railroad tunnels, allowing of their execution in conditions of high accuracy, with substantial reductions of material expenditures and manual labour. Based on computer-aided calculations, presently applied on the construction of the Bucharest Metro, the method was presented at the International Congress of Telecommunications and Telecommunications, recently held in Japan and was highly appreciated for the originality of the idea, as well as for its technical and economic performance.

## "NAPOTEHNICA" '88

The daily round salon of scientific and technical creation, "Napotehnica" '88 was opened at the Napoca Art Museum. As in the previous years, the salon emphasizes the technical-scientific creation of individuals and the most important achievements on the line of hydraulic and hydraulic, of technological modernizations, of increasing the quantity and quality of products and obtaining savings through reconditioning, reuse and recycling actions, achievements of enterprises, research and design institutes, "Napotehnica" exhibition facilities, at inventors and innovators in "Napoca". In the salon's stands, windows and on photo panels, some 2,000 objectives representing inventions, "Napotehnica" activities in various fields of technology, technology and production modernization are presented.

## RACE END

Six car contests marked the ongoing national speed control season. They were organized in the following order: at Galati, Buzza, Hrylia, Iasi, Mare, and Oradea. The last one, held at Iasi Mare, was actually the "finish line" of the 1988 season. The outstanding leaders of this year are Nico Grigoras and Victor Neumir. Both of them driving their cars representing the Pitești Car Making Plant) who finished unbeaten all the six races of the competition in the first two groups. The top place in the final standing went to the team of the Dacia Pitesti car making enterprise.



## WELDING WITHOUT ELECTRODES

Clastic welding electrodes are soon to become museum exhibits. At least this is the opinion of the interdisciplinary collective of the Institute of Welding and Material Testing of Timisoara (Timisoara county) and the Metal Construction Enterprise of Borca (Covas-Severin county). The former in their capacity as designers and the latter as producers have built a friction welding machine. Electrodeless welding has been replaced by friction open butt welding. The two pieces to be welded are fixed together and perform two movements: one of translation and the other of rotation. By friction heat, the two pieces are welded and then pressed under 30, 40 or 100 tons (depending on three types of machines so far designed for the above-mentioned technology) and the soldering is ready. Noteworthy is that the new technology does not require that the two parts should have either the same diameter or a limited length. The friction welding development solves different kinds of material which could have never been processed by conventional methods: aluminium with steel materials with many alloy elements and even glass. From among the performance of the machine installation should be made that the welding time is shorter (2-3 seconds per minute). Besides, it is recommended for large-series production and low energy consumption (some 1 kw for a welding).

## THE CARPATHIANS IN WINTER

All the Romanian mountains have already been covered with a thick layer of snow for a while. Winter sports have come to their own. Mountain resorts have long prepared to receive their guests during the winter season. Hotels and restaurants have been updated, ski slopes have been rearranged and skating rinks covered by a fresh layer of ice. Cable transport systems already operate in the fall. Even this season, still the ski season is ready to help out. However, we hope it will be as hot as last year.

## THE CLINIC OF BAILE FELIX

Some of our readers are acquainted with the name of Baile Felix. The famous spa lies in the city of Oradea, renowned for its geothermal waters, its constantly hospitable both for Romanian patients and for foreign tourists who come to the Baile Felix Hotel and other hotels every year for a balneal cure. The latest construction raised at Baile Felix includes a recovery hospital, with a clinic of 15 beds which are to become a base of medical assistance and scientific research of the Institute of Medicine and Pharmacy in Bucharest, respectively of the Department of Physical Medicine, Balneology and Medical Recovery. Like in any other university clinic, students will learn here the secrets of the treatment of rheumatic diseases and attention to the nervous system. The laboratory of research into natural therapeutic factors conducting this practical form of education. At the same time the new clinic serves as a centre for improving the professional skills of balneologists.

Prof. Medica: Dr. L. CONSTANTIN, M. RADULESCU, G. FLOREA, V. DIMITRA, P. MIRAL, M. CONSTANTIN, N. SUCU, D. GUSTAVIANU. Photos by AGRUPH.

## A NEW RAILWAY

Work has started these days on a new railway which will link the town of Irlia in 141 county to Flambou in 141 county. A future urban centre, in Botosani county, the new project will be built by the Enterprise No. 1 of the East Regional Railway Management. It will cover 20 km, with stations at Irlia and Flambou. The railway will run through a nearly 800-metre tunnel. The investment includes the modernization of the Irlia station and the building of a new station at Flambou. The workers of the Brasov Tunnel and Railway Construction Enterprise will also help complete the new railway which will contribute to the socio-economic development of the localities in the region, and the increase of passenger and goods traffic.

## SPORTS

Victoria Bucharest have clawed their way into the quarter-final stage of the UEFA Cup being the third Romanian squad to survive the first two rounds of the European club competitions. It is the best performance registered so far by Romanian soccer in these competitions.

After scraping home a mere 1-0 against Turan Pulosova Turkey 1-0 in the first leg Victoria lost their away match 3-2. Their two away goals earn them a well-deserved win. Victoria actually led 2-0 at one stage through Solomon (in the 18th and 18th minutes, the latter with an unexpected help from

the Finnish fullback Heikki Kari) and squandered several other great chances. But the hosts managed to notch in the 31st, 51st, and 95th minute (the Dutch referee Thomas prolonged the game unjustifiably. Equally unjustified were his reasons to show three yellow cards to the Romanian players, most probably to temper their clan).

Romanian Danielescu, the Olympic winner of the Seoul Games, has been rated first in the world's top of the best woman gymnast in 1988, by the International Federation.



## A VILLAGE PREPARES ITS FUTURE

Răcari commune lies in the southern part of Dimbovița county. It comprises five villages: Ghergoni, Răcari, Movradin, Colacu and Glimpaj. Princely chancellery documents attest the existence of these localities as early as the 16th century. In the following century, the settlement was recorded as a commercial centre exerting a powerful influence on the economic life of the surrounding villages. There followed a long period of stagnation spanning nearly two centuries. Over the last few years however, the economic life of Răcari commune has seen an ever faster development pace. Farming activities have been updated and diversified. The average harvests of cereals and technical crops have grown considerably, both following the cultivation of new strains and hybrids and the modernization of farming technologies. Important land reclamation and irrigation works have been conducted. Industrial activities — especially on a small scale — have flourished.

The economic and social structure of our village fit in perfectly with this situation. For instance the main production units are two cooperative producer farms — C.A.P. Răcari and C.A.P. Colacu, an inter-cooperative association growing and fattening young rams, handling 20,000 heads annually, no agricultural mechanization centre with 250 tractors, 40 self-propelled combine harvesters and a whole network of farming machines. On the other hand, out of the 8,700 inhabitants of the commune 8,530 live in new dwellings of their own, with orchards or vegetable gardens, also growing chickens, pigs, cattle and sheep.



Julia Necula — the mayor of Răcari commune at work (top left). Another child in turn at the commune's material institute. A commune activity at the Intercooperative Economic Association for Sheep Breeding (bottom)



Near-future towns planning forecasts and programmes indicate a vigorous economic and social thriving of Răcari commune. What grounds justify this assumption? That particularly this locality will polarize the inhabitants' economic and social interests? I approached this subject while discussing matters with Julia Necula, the woman who over the last six years proved a tireless mayor of Răcari in her attempt to develop her native village.

"Seen from the inside, the modernization drive is not a routine administrative event but first of all a collective state of mind. It works like an electric transformer which raises the tension of social, economic and cultural life. Moreover, I want to specify that it is not just a transient fever: this process started a long time ago. More obvious signs could be noticed as early as 1958, in the wake of the new territorial and administrative division. That moment was a real springboard for us, channelling development-related investment funds more naturally and, why not, more democratically. Over the last two decades Răcari commune's economic strength has multiplied several times. But the basic activity has always been agriculture. Even our recent industries have been specializing in processing the farm output. Because here we are in a plain area, probably the most fertile in the whole county. The people living on this sub-Carpathian plain regard us as an exclusively farming area. And they are right because annually some 4,000 ha are cultivated with maize on which inside the frontiers of Răcari commune. At the same time we are a kind of vegetable basin for the two million inhabitants of Bucharest, which happens to be only 35 km away from here.

The economic and social structure of our village fit in perfectly with this situation. For instance the main production units are two cooperative producer farms — C.A.P. Răcari and C.A.P. Colacu, an inter-cooperative association growing and fattening young rams, handling 20,000 heads annually, no agricultural mechanization centre with 250 tractors, 40 self-propelled combine harvesters and a whole network of farming machines. On the other hand, out of the 8,700 inhabitants of the commune 8,530 live in new dwellings of their own, with orchards or vegetable gardens, also growing chickens, pigs, cattle and sheep.

"Can you call some of the factors which have favoured Răcari commune against the other villages in the area?"

"First of all our territorial position. Surveying the network of localities and delimiting the spheres of influence of each town, it is easy to notice that the lines of magnetic force of the nearest town, namely Timișoara, do not cover a large and densely populated area. Consequently what we need here is an urban centre able to polarize the individual and collective interests of 10,000 people. Răcari commune is much better located than the nearby villages. Besides it has access to railway and main roads. On the other hand, the commune's economic power — economic units providing plenty of jobs as well as establishments of an interest which exceeds the village bounds, such as a hospital, a maternity, a high school, the railway station and others are presently functioning as a local magnetic force. After all, even in 1763 our locality was regarded as a small trading place. The reason why I bring into discussion a document issued two centuries ago is that historical tradition was not ignored either when the decision was taken to stimulate the expansion of urban civilisation landmarks.

"Therefore, you see, Răcari does not plan to assume the status of a city overnight. It simply carries on a process

started a long time ago. As far as I am concerned, I can only regret that a mayor's mandate and even a lifetime are too short in comparison with such a capitalizing and yet very long social process.

"You specify some elements of urban civilisation and mention a few planned to be created in the agricultural centre of Răcari?"

"Personally, I don't think there is such a thing called the interior from which urban life can be considered to exist and further more I doubt whether the existence of a superior commune, housing or cultural centre, is a village cannot overcome. Here, at Răcari, our rural status has prevented us, so far, from introducing running water in dwellings, laying out a sewerage system with a water treatment station, setting up an autonomous exchange connected to the inter-urban network, etc.

Most of the latest archaeological diggings contribute to the solution of problems concerning the exact dating of certain events as well as the solution of less known elements of Romanian ancient history. In this category is included for example, the presence of the tribes of free Dacians (Carpi) on the territory of Roman Dacia.

The existence of the Carpi in the inter-Carpathian arch is testified, among other things, by an inscription from Aunum (Alba Iulia) on an altar built by G. Valerius Serapio, Olden's which is minor with magical signs were found at Sebeș-Alba, Meresti-Iarghila, Urziceni-Irașeu, Sopor de Ciupercă, Obreja-Alba, Medias, etc. An important number of inter-Carpathian graves discovered by

Archaeologist G. Diaconu, B. Ilini, relying on proofs offered by the latest discoveries or from the analysis of all resources carried out until now, draw valuable conclusions giving a new outlook to investigations in the respective field.

Starting from certain dating elements established, based on the inventory of graves from Sopor-Irașeu-Nășand, showing that the groups of Carpi penetrated west of the Carpathians in the last decades of the third century, the archaeological linked other elements leading to an identical dating. These elements were coins with geometric handle, made of silver horn, with plates assembled by means of rivets. These types of coins were also found in the late free Dacian environment as well as in that of free Dacians south of the Carpathians.

and in the final stage of the respective culture, next to other elements revealing oligoeneous vestiges which penetrated at a certain period the native environment south and east of the Carpathians. Other elements are represented by a circular mirror, lapidary beads found by archaeologists in the centre of the province Dacia, which were obviously brought by the Carpi towards the end of the 3rd century A.D.

"In the current stage of research," concludes archaeologist G. Diaconu, "three working hypotheses could be advanced concerning the presence of the Carpi in the territory of Roman Dacia. First of all, in the light of the finds of Sopor-Irașeu-Nășand, we have to agree with G. Marinovici that the soil of the 2nd century A.D.



The terraces with Neo-Neolithic habitation vestiges — Chelie Turculor. Fire hearths, levels two and three (above). Roman coins from the Apulian hoard — over 1,000 pieces (left). Cluj Napoca — northern area — Chinteni. Villa Rustica (middle). Cluj-Napoca. General view on the Roman and late Roman country — a late Roman grave — 3rd century AD (bottom, left).

groups of free Dacians settled west of the Carpathians with their traditional material and cultural culture, recalling that of their native land. Secondly, we may assume that at a certain moment during the second half of the 3rd century A.D. groups of Carpi settled themselves in the living hearths of the Daco-Roman population, introducing one another culturally and substantially, as part and parcel of the process of symbiosis occurring between the two related peoples. Apparently, such situations are easily held to be reflected by the discoveries made at Sopor de Ciupercă (Cluj county) and Obreja-Alba (Cluj county). Finally, the third trend of analysis, such as the mirror of Sebeș-Alba, the linked-like medallions, as well as others, which have not been mentioned yet in an exposed area, can be considered alien from the Daco-Roman environment, but most probably they were used by the Carpi during their raids upon the province, through the 3rd century A.D.

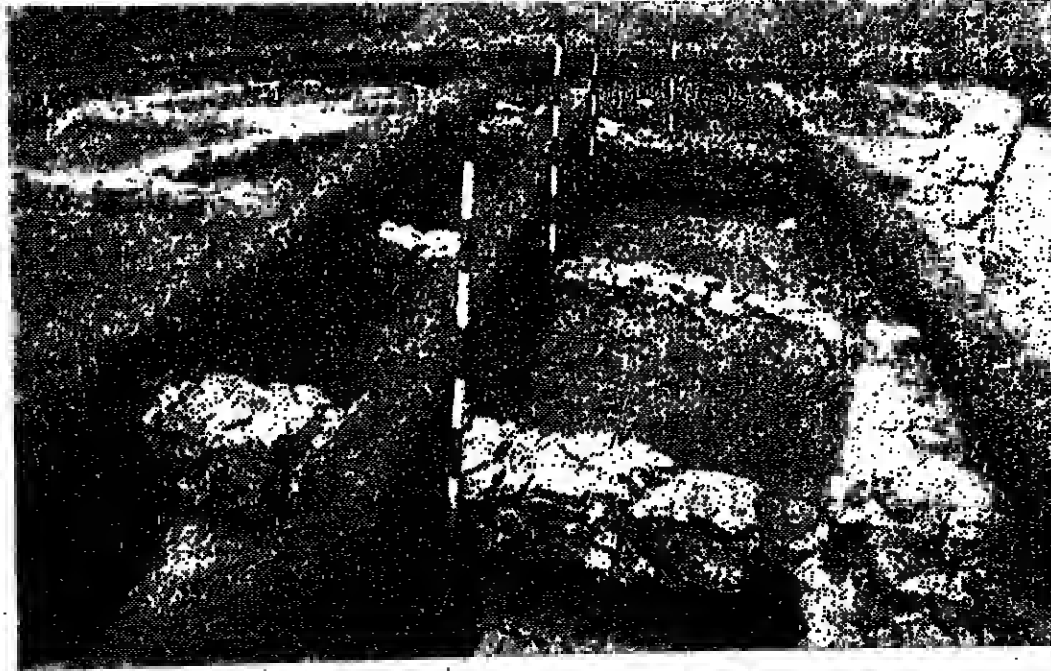
Taking such considerations as a basis, the archaeologists of Bucharest conclude that the written sources referring to the events occurring between 234 and 271 can be connected with the Carpi's invasions in the inter-Carpathian Dacia and Roman Dacia. While the firm settlement of the free Dacians in the province rural have taken place after the epoch of Emperor Gallienus and Aurelian, the historical facts show that Dacia could have never remained a wasteland. It was continuously inhabited by natives, by Gelo-Dacians and Daco-Romans.

GHI. BRATESCU

Archaeologist G. Marinovici, at Sopor-Irașeu-Nășand, brought to the Carpi who crossed the mountains settling in the inter-Carpathian arch. The white inventory found there is identified to that of the free Dacian graves discovered east of the Carpathians. Also, at Sopor de Ciupercă, material elements of the Carpi culture were found in a necropolis.

While the existence of the free Dacians in the inter-Carpathian arch has been a certainty, a new problem arose, that of the movement of their penetration on the territory of Roman Dacia. A series of ideas were proposed referring to the Carpi's penetration and settlement of their tribes on the territory inhabited by the Daco-Romans. Certain specialists reached the conclusion that between 234-271, the Carpi occupied by force a part of the province's territory, forcing back to the last 1st century A.D. the Roman administration. Others considered that the tribes penetrated the province after the withdrawal of the Roman administration, or maybe later, after 285-297.

During the archaeological campaign carried out in Buceava county, researchers have continued into the medieval past of the urban settlements of Buceava and Sibiu. At Sibiu, on the site of the former residence of the prince, a civilian residence used in the interval between the reign of Alexander the Good and that of Stephen the Great, was discovered. The site is located on the left bank of the river, near the city of Sibiu, and is a valuable archaeological site.



## NEW FINDS

On the Tulgheș Hill, in the northern area of Cluj-Napoca municipality, archaeologists unearthed traces of a Roman farm made up of a main building and several annexes. The farm covers approximately 3.5 ha, lying on a Roman military road between the Tulgheș Hill and the Roman city of Apulum. According to Cluj-Napoca specialists, the farm had been raised over Dacian dwellings dating back to the last 1st century A.D. The first discoveries highlighted traces of material life — pottery, tools, pavings, fire hearths, ovens — located round the farm, proofs of the Daco-Roman cohabitation and symbiosis. Olveo Court Archaeologists identified a civilian residence used in the interval between the reign of Alexander the Good and that of Stephen the Great, was discovered. The site is located on the left bank of the river, near the city of Sibiu, and is a valuable archaeological site.

of the Romanian people. Thus, 18 dwellings were discovered at Todirești and Bănești. The objects unearthed here (earthenware and adornments) point to the continuity of the native population within this space after the Romans had left Dacia (between 5th and 7th centuries). At the same time the first investigations were made into Gelo-Dacian settlements discovered at Bănești, Todirești and Bănești. After the archaeological and systematic excavations of the sites, the archaeologists will make public their conclusions in the 18th volume of the Yearbook of the Buceava county Museum.

N. VERES  
I. BELDEANU







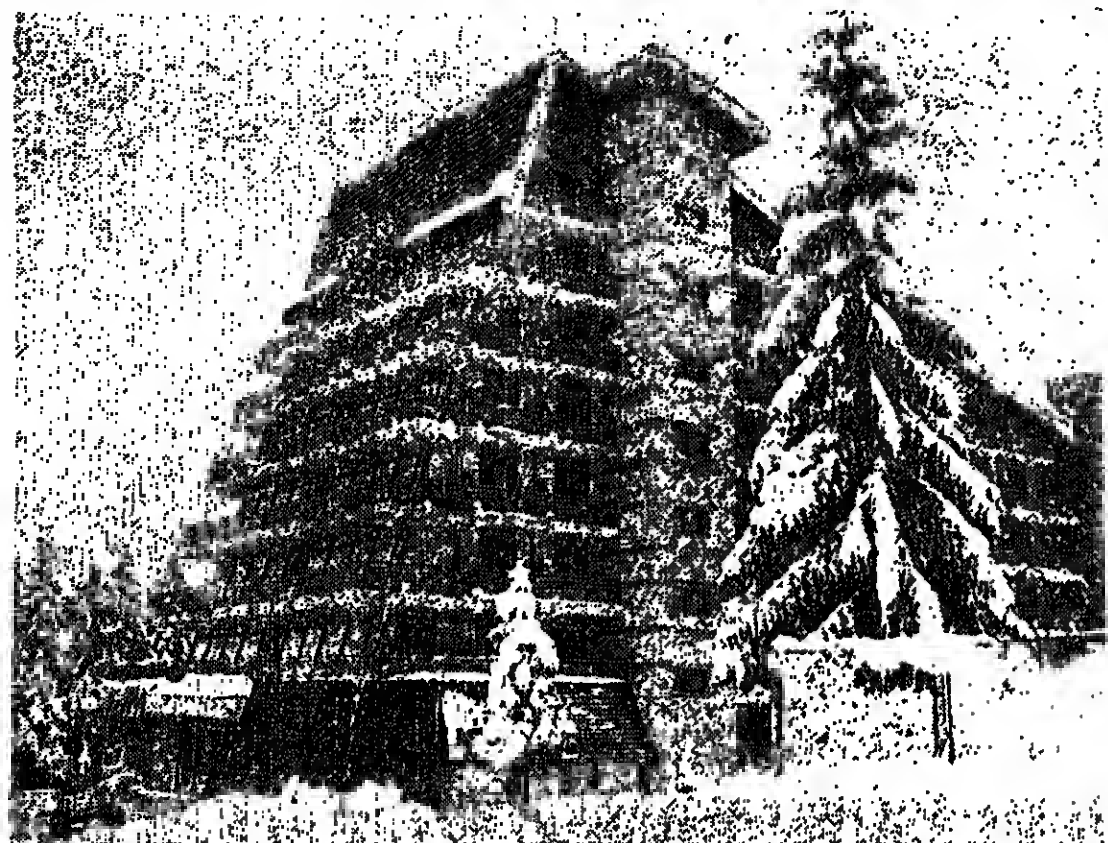
## NEW YEAR'S EVE CELEBRATION IN ROMANIA

New Year's Eve is welcomed with joy and hope everywhere. The towns are wearing festive clothes. The children, young and older people are full of optimism, gaiety, faith in future prosperity.

New Year's Eve starts on Romania's tourist map from elevation zero. That is from the place where the sun rises, the Black Sea horizon. On the Romanian Black Sea coast, in modern hotels at Eforie, Neptun, and Mangalia, New Year's Eve

restaurants: Intercontinental, Athene Palace, Bucuresti, Parcoul Trandafirilor, Lido, Dobroesti, Nau Jiu with Chinese specialties, Varna with Polish specialties and in premiere, the modern and elegant

will celebrate the New Year's Eve in mountain chalets. Tourist organizers, men of figures, of precision, men of taste, some 800,000 Romanian and foreign tourists will spend the New Year's Eve in units with tourist profile. A night thoroughly prepared by the hosts. Masters of culinary art will prepare delicious menus, which will certainly include traditional dishes: foretaste rolls of cabbage with maize porridge, the appreciated turkey cuisine,



various kinds of meat jelly, fish, ramsin, etc. All these sprinkled with excellent rum brandy and wines from the famous Romanian vineyards of Ruscova, Petroseni, Balaia, Mula, Balu, Harghita, Valcea, Calandrescu.

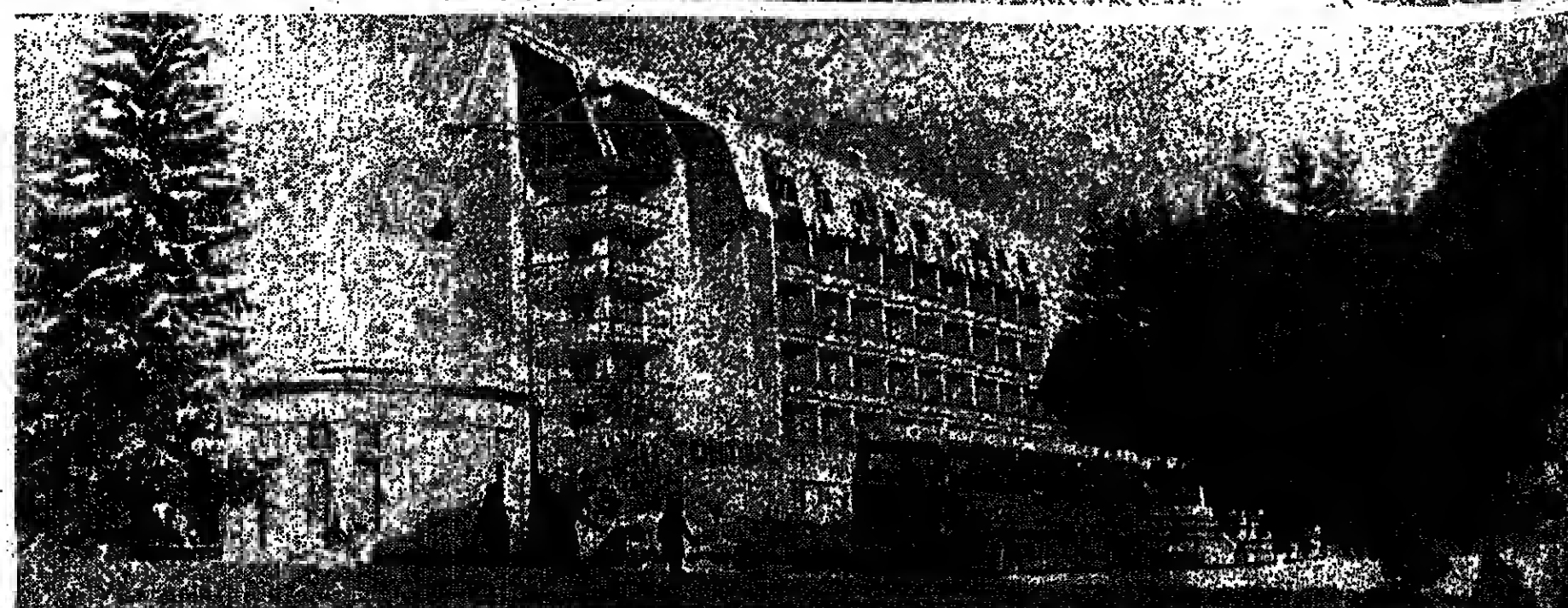
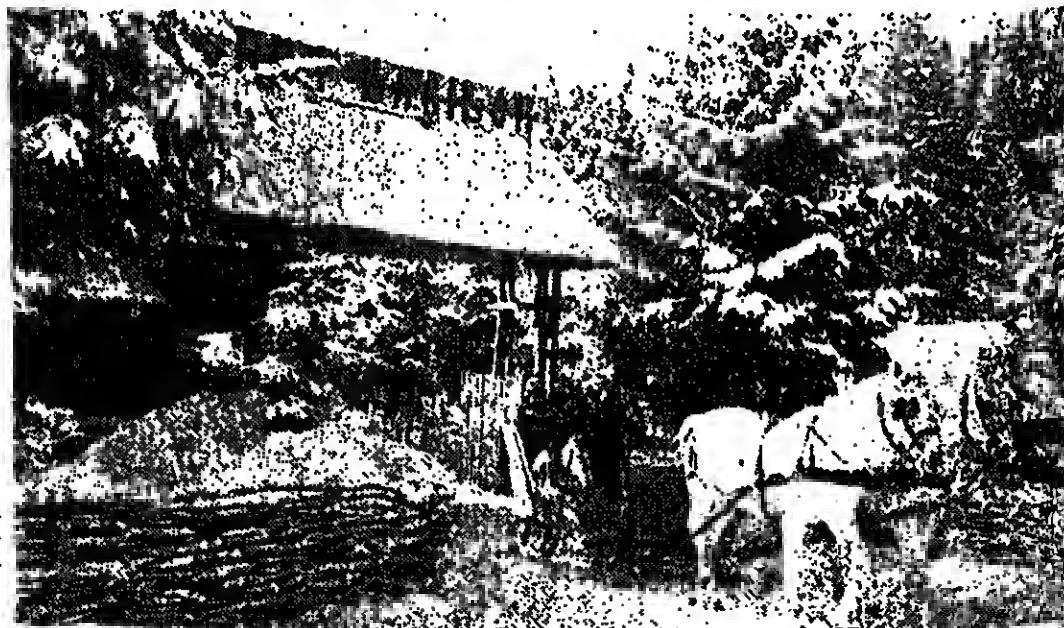
Significant in this respect is the declaration of a highly tourist, Mrs. Marie Jeanne Janyx who remarks after spending the New Year's Eve in Romania: "If you have the chance to spend the New Year's Eve and the vacation here, then you can say you have known traditions unequalled in the world."

CONNELLY BARAN

85 will gather around rich tables over 8,000 guests coming from the whole country or from abroad. We should also mention here the hosts' intelligence: those foreign tourists who learn the quickest and best Romanian New Year's Eve customs are invited as winners of the contest, to spend their summer holidays on the Romanian littoral. If we followed the New Year's Eve celebrations on Romania's tourist map it would appear as a fairy tale, varied, multicolored amphitheatre, its base would be the littoral and the towns along the Danube — Tulcea, Drobeta, Galati, Giurgiu, Iroabela-Turnu Severin where the season's celebrations with the atmosphere specific to the night separating two years gather at tables not only Romanians and foreign tourists, but also navigators coming in the welcoming Romanian ports.

Before knowing the "higher level" of this amphitheatre let us stop in Bucharest, the heart of the country, celebrating New Year's Eve in famous, traditional complex Lebedea located on Fintellmon Island. Which could be the following levels of this amphitheatre of celebrating New Year's Eve? They are represented by the mountain resorts. One figure tells everything: Romania has over 180 mountain and balneocurative spas of national and local interest. In each of them the "longest night" will gather thousands and thousands of people.

In resorts like Poiana Brasov, Sinaia, Predaia, Vala Dornel, Paltin, Sevinet, Sina de Vale, Durau, Herculane, Felix, there will be many foreign tourists enjoying the atmosphere of Romanian New Year's Eve celebrations. They come through travel agencies with which the Carpat National Travel Office is connected — from West Germany, Belgium, the Netherlands, France, Great Britain, Denmark, Norway, Sweden, Turkey, Israel, Yugoslavia, Czechoslovakia, the GDR, Bulgaria, the USA and Canada. Almost 15,000 tourists — especially young people



## THE NEW YEAR'S EVE IN ROMANIA

The famous resorts Poiana Brasov, Predaia, Sinaia, the pearls of the Romanian Carpathians as well as the spas Durau, Sinaia, Moldova, Felix, Herculane, Calimnesti, Căciulata, Tugrad, a.a. are the best places to spend the New Year's Eve in 1988.

Comfortable transport means, competent guides, comfortable hotels, international cuisine, hospitality, recreation, all these are reasons for choosing one of your favorite resorts.

Total relaxation, natural cure factors

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By spending the New Year's Eve in Romania you can get acquainted with the great achievements of the Romanian people, you can admire the country's beautiful landscapes.

Well trained travel agents have a rich documentation and can recommend you the best solutions for your sojourn.



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